DOCUMENT RESUME

ED 330 329 IR 014 948

TITLE	Automation of Oklahoma School Library Media Centers: A Plan for the Development of Technology in Library Media Centers.
INSTITUTION	Oklahoma State Dept. of Education, Oklahoma City. Library and Learning Resources Section.
PUB DATE	90
NOTE	70p.; For related documents, see IR 014 946-947.
PUB TYPE	Guides - Non-Classroom Use (055) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Access to Information; Check Lists; Databases; Elementary Secondary Education; *Government Role; *Learning Resources Centers; *Library Automation; State Departments of Education; *State Programs; Systems Development

ABSTRACT

This training manual and statewide plan begins by describing the role of the Oklahoma State Department of Education, Library Resources/Technology Section as one of providing leadership, consultation, communication, and coordination in the systematic development of technology in Oklahoma school library media centers. Information about the Oklahoma School Library Automation Network is then presented, followed by a detailed outline of the process of automation at the local level. This process begins with planning, which covers: (1) levels of school library media services; (2) library automation functions (library management, collection management, information access); (3) automation needs assessment; (4) costs and timeline; (5) automation committee; (6) district plan; and (7) board of education. The steps in database creation are then outlined, including standardization, weeding, inventory and shelf list, and retrospective conversion. Other steps in the process are also described; i.e., software selection, hardware selection, installation, and operation and maintenance. Implementation of the statewide plan and the development of a statewide school library database are described in the final sections. A checklist for a building-level media center profile to help decision-makers choose whether or not to automate is included, as well as a checklist for an assessment of system requirements. Attached materials include a collection of eight brief articles for supplementary reading, a sample outline for a library media long range plan, and an evaluation form for a local level workshop. (29 references) (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

IR

Automation of Oklahoma School Library Media Centers

A Plan for the Development of Technology in Library Media Centers

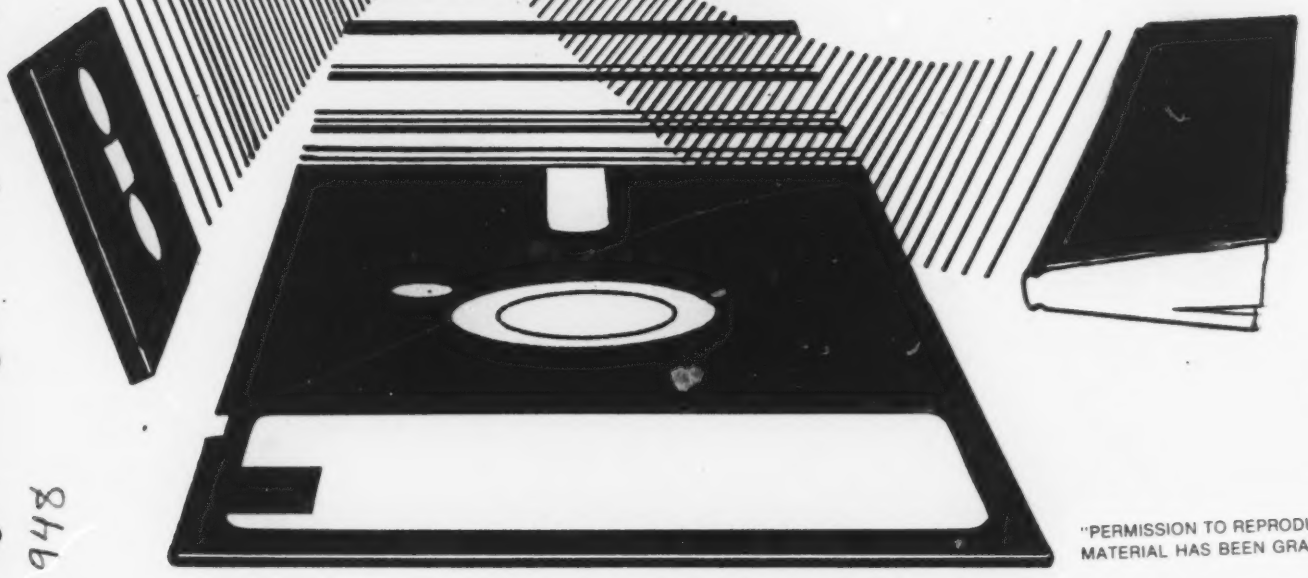
U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED330329



Oklahoma
State Department of Education
Gerald E. Hoelzel
State Superintendent
of Public Instruction

1990

IR 014 948

BEST COPY AVAILABLE

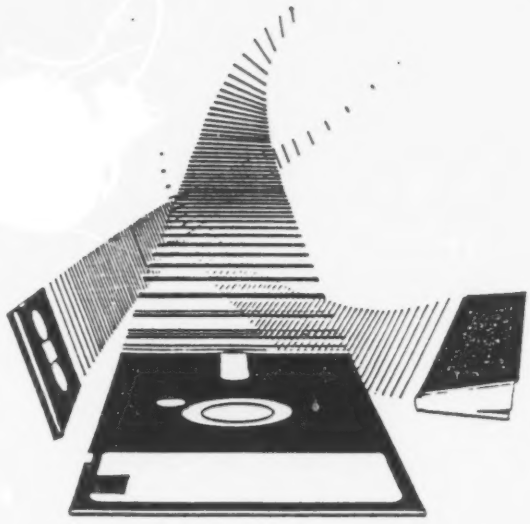
"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C. D. Jones

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Automation of Oklahoma School Library Media Centers

A Plan for the Development of Technology in Library Media Centers



Prepared by

Library Resources/Technology Section

1990

ACKNOWLEDGEMENTS

Library Resources/Technology Section

Barbara Spriestersbach, Director
John McGrath, Assistant Director
Bettie Estes-Rickner, Coordinator
Betty Riley, Coordinator
Carol Casey, Coordinator
Kathleen Curran, Secretary
Toni Pool, Secretary

Special Assistance

Paula Krivanek, Word Processing
Janet Douglas, Word Processing
Ginger DiFalco, Word Processing
David Barrow, Cover Design
Mark Raidt, Data Services
Ken Carmichael, Data Services

The following library media specialists in Oklahoma schools contributed to the development of this plan:

Vicki Stewart, Bartlesville
Jeanie Johnson, Lukfata
Carolyn O'Brien, Choctaw
Pat Davis, Enid
Lou Nelson, Guymon
Linda Gann, Jenks
Pat Kardaleff, Lawton
Barbara Rather, Tulsa Union
Karen Williams, Stillwater
Norma Dreyer, Tulsa

Oklahoma State Department of Education
Gerald E. Hoeltzel
State Superintendent of Public Instruction
Oklahoma City, Oklahoma

TABLE OF CONTENTS

Preface

Role of the Oklahoma State Department of Education, Library Resources/Technology Section 1

Regional Network 3

- Oklahoma School Library Automation Network 3
- Automation Regions Map 4
- Statewide Automation Task Force 5
- Automation Status of Oklahoma School Library Media Centers 5
- Regional Workshops 5

Automation at the Local Level 6

- Levels of School Library Media Services 6
- Long-Range Plan 8
- Automation Plan 8
- I. Planning 8
  - A. Library Automation Functions 8
    - Library Management 8
    - Collection Management 9
    - Information Access 11
  - B. Automation Needs Assessment 12
  - C. Costs and Timeline 17
  - D. Automation Committee 17
  - E. District Plan 17
  - F. Board of Education 17
- II. Database Creation 18
  - A. Standardization 18
  - B. Weeding 18
  - C. Inventory and Shelf List 19
  - D. Retrospective Conversion 19
- III. Software Selection 21
- IV. Hardware Selection 22
- V. Installation 23
- VI. Operation and Maintenance 24

Implementation of the Statewide Plan 24

Developing a Statewide School Library Database 25

- Rationale 25
- Implementation 26

Bibliography 27

Appendix 29

PREFACE

The automation of Oklahoma school library media centers is necessary to fulfill their mission as stated in *Information Power: Guidelines for School Library Media Programs* (ALA/AECT, 1988). That mission of ensuring that students and staff are effective users of ideas and information is achieved by providing access, instruction, resources, and activities that contribute to lifelong learning. Providing access and resources includes the development of a statewide database of school library media center holdings to facilitate expanding beyond building-level collections by participating in networks and resource sharing.

In order to assist school library media centers in Oklahoma achieve an appropriate level of automation using available technology, the Oklahoma State Department of Education, Library Resources/Technology Section applied for and received a grant from the U.S. Department of Education under the Library Career Training Program. As a result of that grant, three two-day workshops were conducted in the fall of 1989. Building level library media specialists, Oklahoma State Department of Education library resources personnel, representatives of the state's library training institutions, the Oklahoma Department of Vo-tech, and Oklahoma Department of Libraries personnel received training in the theories of library automation with practical applications at the local district level. The participants were instrumental in the development of this document which will serve as a training manual and statewide plan for the systematic development of technology in school library media centers across the state of Oklahoma.

THE ROLE OF THE OKLAHOMA STATE DEPARTMENT OF EDUCATION

The role of the Oklahoma State Department of Education, Library Resources/Technology Section is to provide leadership, consultation, communication, and coordination in developing the technology of Oklahoma school library media centers.

The mission of school library media centers as stated in *Information Power: Guidelines for School Library Media Programs* (ALA/AECT, 1988) contains a number of objectives and challenges for the school library media specialist which are directly or indirectly related to technology and automation. These objectives are:

1. **to provide intellectual and physical access to materials in all formats** through (a) a carefully selected and systematically organized collection of diverse learning resources, representing a wide range of subjects, levels of difficulty, communication formats and technological delivery systems; and (b) access to information and materials outside the library media center and the school building through such mechanisms as interlibrary loan, networking and other cooperative agreements, and online searching of databases.

2. **to provide instruction to foster competence and stimulate interest in reading, viewing, and using information and ideas** which includes (a) introduction to the full range of communications media and use of the new and emerging information technologies; and (b) leadership, instruction, and consulting assistance in the use of instructional and information technology and the use of sound instructional design principles.

3. **to provide resources and activities that contribute to lifelong learning** that represent a diversity of experiences, opinions, social and cultural perspectives, supporting the concept that intellectual freedom and access to information are prerequisite to effective and responsible citizenship in a democracy. Few schools are equipped with the full variety of resources necessary to satisfy all of the needs of their students and staff. Many students and some teachers lack direct access to any other library or information agency. Therefore, school library media centers should provide effective access to other libraries that can, as needed, provide other information resources.

In carrying out this role, the Oklahoma State Department of Education, Library Resources/Technology Section will provide:

1. **Leadership**

   - Develop state regions and designate regional representatives to form a statewide automation task force to facilitate local development of resource sharing and automation.

   - Participate actively with other libraries across the state in the development of resource sharing and a statewide database.

   - Seek legislative initiatives in support of school library media automation and resource sharing.

2. **Consultation**

- Provide continuing education for library media specialists to obtain the knowledge necessary to help students and teachers take full advantage of existing and emerging information and instructional technologies.

- Provide staff development programs on philosophy, concepts, and trends of school library media automation to administrators, supervisors, library media specialists, curriculum directors, teachers, and patrons.

- Assist schools, districts, and regions in developing long-range plans for school library media automation.

3. **Communication**

- Collect and disseminate information from regional, state, and federal sources related to school library media automation.

- Generate publications to assist district- and building-level personnel in providing improved library media service.

- Promote school library media automation through public relations activities.

4. **Coordination**

- Encourage use of interlibrary loan and cooperative agreements among school, public, academic, and other libraries.

- Develop protocol for resource sharing.

- Develop state standards and/or guidelines for school library media automation.

- Meet twice a year with the statewide automation task force.

- Assist in the development of regional workshops as needs indicate.

REGIONAL NETWORK

Oklahoma School Library Automation Network

The development of the Oklahoma School Library Automation Network will facilitate automation and resource sharing in school library media centers.

After examining a number of established regional configurations, the Oklahoma Telecommunications Interlibrary Loan System (OTIS) configuration was selected as a workable prototype for the Oklahoma School Library Automation Network. Using the OTIS boundaries will facilitate future cooperation with existing interlibrary loan systems.

The designated regions will be divided by counties as follows:

REGION	COUNTIES
Guymon:	Beaver, Cimarron, Texas
Enid:	Alfalfa, Blaine, Ellis, Garfield, Grant, Harper, Kay, Kingfisher, Major, Noble, Woods, Woodward
Western Plains:	Beckham, Custer, Dewey, Greer, Harmon, Jackson, Kiowa, Roger Mills, Tillman, Washita
Stillwater:	Creek, Hughes, Lincoln, Logan, Okfuskee, Pawnee, Payne,
Metropolitan:	Oklahoma
Pioneer:	Canadian, Cleveland, Grady, McClain, Pottawatomie, Seminole
Lawton:	Caddo, Comanche, Cotton, Jefferson Stephens
Chickasaw:	Atoka, Bryan, Carter, Johnston, Garvin, Love, Marshall, Murray, Pontotoc
Tulsa:	Craig, Mayes, Nowata, Osage, Ottawa, Tulsa, Washington
Eastern Oklahoma:	Adair, Cherokee, Delaware, Rogers, McIntosh, Muskogee, Okmulgee, Sequoyah, Wagoner
Choctaw:	Choctaw, Coal, Haskell, Latimer, LeFlore, McCurtain, Pittsburg, Pushmataha

Statewide Automation Task Force

Each region will have a School Library Automation Committee consisting of librarians or library media specialists. The members will be appointed by the Oklahoma State Department of Education, Library Resources/Technology Section based on availability and demonstrated library automation experience. Participation in the 1989 Oklahoma Micro-based Library Management Training Seminar, seminar application, and/or library automation survey responses will be used to identify potential committee members.

A statewide automation task force consisting of one representative from each region will be established. The task force member will be selected by the Oklahoma State Department of Education, Library Resources/Technology Section from the automation committee for the region and should have an interest in providing leadership in developing the technology of Oklahoma school libraries.

Automation Status of Oklahoma School Library Media Centers

A survey will be developed and sent to each school administrator to determine baseline data on existing technology in Oklahoma school library media centers. After the baseline data has been gathered, a directory will be published providing information identifying task force members and regional committee members. The directory will also contain regional data on hardware and software applications currently in use in Oklahoma school library media centers.

Further surveys will be developed by the statewide automation task force to determine local attitudes, needs, and feasibility of networking and automation.

Regional Workshops

Regional workshops will be planned and implemented by the task force and regional committees based on information gathered from surveys. Each workshop plan will 1) identify intended audiences--librarians, teachers, administrators, support groups, etc.; 2) define goals and objectives; and 3) provide training for regional presenters. It will also provide materials such as slide programs, transparencies, handouts for reproduction, etc., to support the workshop.

AUTOMATION AT THE LOCAL LEVEL

Many issues confront Oklahoma school library media centers today. There are such traditional concerns as censorship and stretching the budget, but recently a new anxiety has surfaced involving automation of the school library media center.

Automation in a library media center is generally regarded as the application of computer technology to a specific task. Automation of the school's library media program may be something that is not undertaken, but it must be considered as short- and long-range goals are developed. Automation requires school library media specialists to rethink traditional services and the provision of new services as they are faced with the complex challenge of expanding access to increasing amounts of information. In developing short- and long-range goals, first determine the library's level on the library media services continuum.

Levels of School Library Media Services

Level 1 (No involvement or cooperation)

General Description - The library exists as a separate and independent institution either by choice or by lack of any precedent for cooperation. Automation and technology are limited to traditional audio-visual materials and equipment to supplement the curriculum.

Characteristics - There has been no history of cooperation. Formal contacts have not been made between schools or other institutions. There may be no public library in the region. There are no library media personnel in the school or school system. There is no telephone in the school library media center. There are no satellite receivers or microcomputers in the school.

Level 2 (Informal cooperation)

General Description - Libraries are still quite independent entities but experience sporadic cooperation. Some libraries may cooperate more than others but all still rely primarily on their own resources to satisfy user needs.

Characteristics - Assignment alerts are given to public librarians by the school library media specialist. Telephones are available in school library media centers for reference service by either school or public librarians. Joint publicity is used for special library events. A microcomputer is located in the school library and used for limited simple administrative tasks and classroom computer assisted instruction.

Level 3 (Formal communication)

General Description - Communication becomes more purposeful and ongoing in nature, focusing on a specific event or issue. Library staffs may meet together on an irregular basis. Microcomputers in school library media centers are being used for circulation, administrative tasks, and student production (word processing, desktop publications, etc.). Isolated schools use satellite broadcasting to expand curriculum.

Characteristics - Class visits to the public library are scheduled. Public librarians visit the school library media center or school classrooms. Summer programs for children are mutually planned and promoted. Contact between librarians is established through professional

associations or workshops. Collections are inventoried and weeded. Shelf lists are updated to include the LCCN or the ISBN. Instruction in the use of automation is integrated into the school's curriculum. Computers, televisions, satellite networks are purchased to meet demand. Facility renovations are made to accommodate new technologies.

Level 4 (Formal cooperation)

General Description - Mutual goals or objectives guide the cooperative activities of libraries. Though actual materials may not be exchanged, there is an increased awareness of the region's total information resources. Databases are developed. Patrons have access to automated catalogs. Library staffs and administrators have an understanding of the services and missions of the other libraries involved in the regional group.

Characteristics - Joint celebration of library events such as National Library Week are planned. Computerized databases of union lists of periodicals and/or AV materials are developed. Bibliographies are exchanged. Cooperative data collection is initiated.

Level 5 (Resource sharing)

General Description - Cooperation becomes more planned, systematic, and ongoing as the commitment to expanded library service grows. Involvement of school administrators, town fiscal agents, trustees, etc., increases because many resource sharing activities involve policies or finances. Short- and long-range regional planning is occurring.

Characteristics - Shared story-telling, book talks, discussion groups, etc., are planned. Loan of school materials to public library during the summer is initiated. School library media materials are available to other schools and public libraries. Compatibility of hardware (video, microcomputer, etc.) throughout the region is sought. Shared display of special materials or projects is developed. Mutual exchange of materials of any kind and intradistrict delivery of the materials to all libraries and library media centers in the region is established. Regular articles in school or local newspapers, library bulletins, etc., are jointly planned and distributed.

Level 6 (Formal planning)

General Description - Cooperation exists on a frequent and regular basis and involves more people. Short- and long-term goals and objectives for library service are developed and approved by the appropriate governing boards. Libraries are fully automated and include on-line services.

Characteristics - Regional libraries and library media centers are involved in cooperative activities such as:

1. Collection development
2. Policy development (selection, weeding, equipment, etc.)
3. Joint cataloging/technical processing
4. Equipment repair, service or purchase programs
5. Shared goal setting for library service within the region
6. Shared program evaluation procedures
7. Exchange of current acquisitions
8. Common automated catalog (CD-ROM, on-line database, etc.)
9. Facilities sharing for district patron services
10. Extended hours at the school library media center to increase patron access.

In Oklahoma, library media centers can be found at any place on this continuum. It is important for each library to determine through long-range planning what is needed to assure future patron access to all information sources.

Long-Range Plan

Because an automation plan must be developed within the framework of the overall long-range plan for the library media center, reexamining that plan and bringing it up to date is a necessary first step in planning for automation. If no long-range plan exists, one can be developed at the same time the automation plan is written.

The long-range plan identifies why the library media center exists, where it is now, and where it is going. This plan should also include the mission statement based on the district's educational philosophy, current status, and the long-range goals.

Goals, objectives, and activities are developed from needs assessments in the areas of 1) library administration, 2) personnel, 3) programs, 4) resources, 5) equipment, and 6) facilities. (See *Procedures Manual For School Library Media Centers*, Oklahoma State Department of Education, 1986, p. 181).

Automation Plan

A local automation plan should help clarify each library media center's goals for future development and automation. If individual library media centers determine through long-range planning that upward movement on the library media service continuum is desirable, the following steps need to be taken in automating a K-12 library media program:

I. Planning:

A. Consider library automation functions as a means of achieving long-range goals.

1. **Library management functions** for libraries where computers are available for staff and patron use can be performed by software which is either task-specific or multipurpose. Task-specific software is generally developed to do only one task, such as printing overdue notices. Multi-purpose software typically includes word processing, database, and spreadsheet applications that can be utilized separately or as integrated programs. Some multipurpose software also includes graphics capability.

Task-Specific Software:

a. Overdue notices
b. Catalog cards
c. Bibliographies
d. Graphics

Multi-Purpose Software:

a. **Word Processing** (text-oriented tasks)
   - correspondence
   - form letters and requests
   - handbooks and policy statements
     - selection policy
     - user manuals
     - procedure guides
   - purchase orders
   - bibliographies

b. **Database** (sorting tasks)
   - inventory
   - hardware/software bookings
   - processing periodicals
   - consideration files/book orders
   - bibliographies

c. **Spreadsheet** (number tasks)
   - budget
   - fund accounting
   - circulation/library statistics
   - orders (especially supply)
   - sign-in sheets and other numbered lists

2. **Collection management functions** in libraries can be performed either by individual software programs or within an integrated system. For example, one library may purchase an individual software program to perform circulation management while another library may purchase an integrated system that performs circulation, on-line public access catalog, acquisitions, serials control, etc. Whatever decision is made, each automated program should meet certain criteria.

Circulation Software Evaluation Checklist

a. Data entry (patrons and titles)
   - error checking
   - batch entry
   - downloading ability

b. Check out
   - scanner and keyboard
   - error checking
   - holds for overdues
   - reserves

c. Check in
   - flags reserves
   - flags and calculates fines
   - pauses for verification of fines, reserves, etc.

d. Update student and title information
   - global delete of students
   - automatically removes reserves
   - easy update of location
   - download title information from a vendor

e. Search capabilities
   - by title/students/barcodes
   - by partial or exact match
   - window access

f. Reports and printouts
   - overdues
   - lists
   - mailing
   - fines
   - reserves
   - Rolodex cards
   - collection and circulation reports

g. Inventory
   - scanner
   - keyboard

h. Backup options
   - floppies
   - tape

i. Customer support and service
   - toll-free number
   - maintenance agreement and fees
   - updates
   - newsletter

j. Training
   - cost
   - on-site training seminars
   - ongoing training seminars

<u>Catalog Software Evaluation Checklist</u>

a. Searchable fields
   - title
   - author
   - subject
   - series title
   - editor
   - illustrator
   - date
   - call number
   - ISBN and/or LCCN
   - access/barcode number
   - publisher
   - content note

b. Searching capabilities
   - phrase searching by exact author/title/subject fields
   - keyword searching in author/title/subject fields
   - boolean searching
   - truncation capabilities
   - authority control
   - forward/backward browsing through author/title/subject lists
   - ability to stop/restart a search at anytime
   - ability to modify/limit a search by date, material type, etc.

c. Input/delete capabilities

d. Security levels

e. Display capabilities

f. Report/print capabilities

Evaluation checklists for additional collection management functions (i.e., serials control, acquisitions, etc.) and integrated systems are available.

3. **Information access functions** give patrons a search tool that does not depend on years of library background and experience to access information and resources immediately available or readily available on interlibrary loan. Multi-library networking offers to members various cataloging and interlibrary loan services as well as union catalog products that are either online or in CD-ROM format. Online or CD-ROM format also offers other resources such as encyclopedias, periodical indexes, and dictionaries.

B. Conduct an automation needs assessment

Building-Level Media Center Profile

Patron Cluster

1. Grade levels of patrons

   P K 1 2 3 4 5 6 7 8 9 10 11 12

2. Number of patrons

   administrators _____ teachers _____
   students _____ support staff _____

3. Anticipated changes in next 3 to 5 years

   grade levels _____
   class size _____
   staff/curriculum _____

Staff Cluster

1. Total FTE

   professional staff _____ clerical staff _____
   volunteers _____ student aides _____

Collection Cluster

1. Number of volumes _____ periodical titles _____ AV titles _____

2. Number of new titles added per year _____

3. Anticipated changes in curriculum in the next 3 to 5 years:

Records/Reports

	frequency	annual total
1. Circulation reports	_____	_____
2. Accreditation reports	_____	_____
3. Overdue records	_____	_____
4. Budget reports	_____	_____
5. Consideration file	_____	_____
6. Inventory report	_____	_____
7. Schedules	_____	_____
8. Other _____	_____	_____

Service Cluster

1. Number of catalog searches per week _____
2. Number of interlibrary loan requests per week _____
3. Number of reference questions per week _____
4. Bibliographies completed annually _____

Special Considerations

1. Average time spent on the following tasks per week:

_____ student/teacher reserves

_____ circulation restrictions

_____ cataloging

_____ tracking lost books

_____ developing and revising lesson plans

_____/_____ maximum circulation per hour/per day

_____ student withdrawals

_____ generation of reports

From your long-range plan, (refer to page 7) list at least three major goals:

1.

2.

3.

List at least three major problem areas in your media center as determined by the profile:

1.

2.

3.

Based on goals listed, answer the following for each goal:

MAJOR GOAL	Can automation accomplish this task faster, more efficiently and more accurately?	Can automation aid patron access to information?	Can automation contribute to resource sharing?
1.			
2.			
3.			

If answers to the above are no, proceed to the next section on database creation. If the questions indicate a need for automation, consider the following:

MAJOR GOAL	Is there considerable repetitive work involved?	Is speed important?	Is accuracy important?
1.			
2.			
3.			

Based on problems listed, answer the following for each problem:

MAJOR PROBLEM	Can automation accomplish this task faster, more efficiently and more accurately?	Can automation aid patron access to information?	Can automation contribute to resource sharing?
1.			
2.			
3.			

If answers to the above are no, proceed to the next section on database creation. If the questions indicate a need for automation, consider the following:

MAJOR PROBLEM	Is there considerable repetitive work involved?	Is speed important?	Is accuracy important?
1.			
2.			
3.			

If you still want to automate, consider the following:

1. A good manual system is better than an automated one which is poorly planned and implemented.
2. Not every task worth doing is worth automating.
3. Automation almost never eliminates any jobs or saves money.
4. There may be problems during automation.
5. Automation takes time!

C. Investigate costs and timeline needed to accomplish automation objectives.

D. Form a district automation committee with the approval of the school administration to create a district plan based on building-level needs assessment.

E. Share the district plan with the administration and faculty.

F. Present the plan to the board of education for adoption.

II. Database creation:

Planning and implementing library automation is a long process. During this time while staff members are becoming familiar with computers and making decisions about automation, preparing the collection for retrospective conversion should begin. The process of converting the information from a paper catalog card shelf list to a computer readable format is called retrospective conversion. Even if there are no immediate plans for automation, preparation of the collection for retrospective conversion should be initiated now. Preparation includes standardization of the classifying process within the district or region, weeding as needed, taking inventory, and developing accurate shelf list cards with an entry for each holding.

A. Standardization

Standardization of the classifying process within the district or region will ensure a less costly, more accurate, and easier retrospective conversion procedure. MicroLIF disks or tapes should be purchased from the vendors when books are ordered and put aside for later retrospective conversion. Location headings such as B, BIO or 92 for biographies, Dewey Decimal places, and number of letters included in entries must be standardized to avoid improper placement of the materials within a computerized shelf list.

B. Weeding

The collection needs to be carefully examined and evaluated. If policies for weeding and inventory are not available, they should be written so that procedures are consistent. A smaller collection which is current, attractive, and used is a greater credit to the school than a large number of older books which tend to remain on the shelves because of poor format or content. The quality of the collection takes on greater importance when the cost of entering each title into a database is considered.

What to Weed:

1. Books of poor content such as outdated information.
2. Volumes of no use in your media center. Three to five years without circulating and the media specialist's knowledge that it has not been used in the media center for reference would probably warrant discarding.
3. Consider discarding if a title does not appear in at least one of the standard book selection aids.
4. Books of very poor appearance such as those with yellow, brittle, dirty or torn pages. Also discard those with dingy, dirty covers or whose antiquated appearance discourages use.
5. Books beyond the comprehension of the prospective reader.
6. Sets of textbooks and old textbooks unless single copies are to be used for reference.
7. Sets of readers should be returned to the classroom or other storage areas.
8. DO NOT discard books and materials on Oklahoma. Repair or send books to the bindery.

How to Weed:

1. **Discards which are not to be replaced** - card and pocket should be removed and ownership stamp marked over. (Consult with your school system on their policy of disposal.) Mark inside the cover of the book "Withdrawn, [year]." Remove shelf list card and cards from the card catalog.

2. **Books to be replaced** - follow the same procedure as in #1 above except do not remove the catalog cards. Instead, place author, title, publisher, on a list of materials to order.
3. **Books to be bound** - See steps involved in "Sending Books to the Bindery," *Procedures Manual For School Library Media Centers* (Oklahoma State Department of Education, 1986, p. 152).
4. **Books to be mended** - See steps involved in "Repair of Print Materials," *Procedures Manual For School Library Media Centers* (Oklahoma State Department of Education, 1986, p. 152).
5. **Specific helps in weeding nonfiction** are found in the *Procedures Manual For School Library Media Centers* (Oklahoma State Department of Education, 1986, p. 156-7).

C. Inventory and Shelf List

When weeding and taking inventory, carefully examine the shelf list card for compliance with the book to be sure it includes:

- accurate citation information;
- ISBN or LCCN for each edition, paperback and hardcover copy;
- consistent Dewey numbers; numbers within the same classification must be extended to the same number of decimal points to avoid bar coding problems;
- consistent recording of author's last name and the biographee's last name to one, two, or three places (example: Blume = B or BL or BLU);
- standardized location headings (example: B, BIO or 92, F or FIC).

Inventory of materials should be done on a regular basis. See steps involved in "Inventory of Materials," *Procedures Manual For School Library Media Centers* (Oklahoma State Department of Education, 1986, p. 151).

D. Retrospective Conversion

The task of converting a paper catalog card shelf list to a form that a computer can read is so costly and time consuming you don't ever want to have to do it again for the same collection. Therefore, it is important that the information on your shelf list is put into a standard format. Since the 1960s that standard format has been MARC records. The term "MARC" stands for the phrase "MAchine-Readable Cataloging Records." The Library of Congress originally devised this standard format to share cataloging information with libraries using large mainframe computers. Using MARC format for school library records enables that school to participate in future cooperative ventures with other types of libraries; i.e., school, public, academic, etc. Book vendors can also deliver MARC records on a disk with any new book ordered so that the information can be automatically added to your computerized card catalog. If you ever outgrow your system or your vendor goes out of business, you will be able easily to load your MARC records into any other system.

The machine-readable data can be on floppy disks or nine-track tapes. The data can then be put into a circulation system or a computerized catalog:

- mainframe computer
- microcomputer with hard disk
- microcomputer with a CD-ROM player

There are three ways of doing retrospective conversion:

- You do **all** the work on-site by entering all data from scratch or by matching against a CD-ROM database.

- You do **some** of the work on-site by entering ISBN or LCCN on batch disks or by using circulation records with ISBN or LCCN.

- You do **none** of the work on-site but send your paper shelf list to a vendor to match their database.

Conversion on-site is least expensive but takes considerable staff and time. Conversion done entirely by a vendor costs the most but requires the least staff and time.

When planning for retrospective conversion the following questions should be considered:

(See "Questions to Guide Retrospective Conversion Choices for School Library Media Centers," *School Library Media Quarterly*, Catherine Murphy, Winter, 1990, p.79)

About the Library...

1. What is the budget?
2. What size is the staff? Professional _____, Paraprofessional _____, Volunteers _____, Students _____.
3. What quality catalog records do you want to obtain? The minimum should be a full MARC record. Some vendors provide enhancements such as grade levels with the full MARC record.
4. How large is your collection?
5. What special features does your collection have?

About the Vendor...

1. What is your fee structure?
2. How many school retrospective conversions have you done?
3. How many catalog records are in your database or databases?
4. How many audiovisual records are in your database?
5. What enhancements are available in the database records?
6. How are records matched?
7. What is your school conversion hit rate?
8. What do you do with nonhits?
9. What is the error rate of the conversion?
10. Do you provide authority control?

III. Software selection:

Once the automation needs have been determined and approved, the next step is to select the software that best meets those needs. The following steps should be considered when selecting software:

1. Begin the software investigation process by reading current automation literature, investigating regional and state plans regarding automation, attending conference/workshop sessions and vendor exhibits, attending vendor demonstrations, and talking and/or visiting on-site with media specialists who have or are automating similar functions.

2. Send a request for information to vendors for the following information:

   a. Software warranty length & beginning date (ship date, invoice date, OR install date)?
   b. Formal software maintenance program including toll-free telephone number? Availability of toll-free number?
   c. Number/skill of technical support staff?
   d. Hours of technical support (east coast/west coast)?
   e. Cost of software upgrades?
   f. Number of operational systems in similar sized school library media centers/districts?
   g. Names/phone numbers of media specialists with system, preferably in your area?

   The financial stability and reputation of the vendor should be determined by answering the following questions:

   a. Do they understand libraries and their terminology?
   b. Years of experience with library programs?
   c. Range of services or functions offered?
   d. Size? (cottage industry vs. corporation)
   e. Primary market: schools, public libraries, academic libraries?
   f. Is sales representative knowledgeable and accommodating?

3. Prepare and complete a System Requirements Evaluation Checklist (See Appendix) based on local needs to evaluate and narrow the field of prospective venders.

4. Seek funding for automation in the next year's budget based on estimated costs.

5. Prepare a Simplified Request for Proposal (See Appendix), and send to selected vendors.

6. Make a tentative software vendor selection using a combination of responses to the RFP (request for proposal), reputation of the vendor and customer support, ability to accept MARC records, cost, and other factors.

7. Make on-site visits to libraries with software performing the same functions with the tentatively selected vendor and determine the following:

   a. Why selected?
   b. Satisfaction?
   c. Problems experienced?
   d. Service from vendor?
   e. Compare the number of students, buildings, and collection size.

BEST COPY AVAILABLE

8. Make a final decision on the vendor and software to be purchased. Place the order including acceptance tests as agreed upon with the vendor. Draft an informal agreement listing vendor and client responsibilities.

IV. Hardware selection:

Select and order hardware, peripherals, and supplies to meet software specifications. The following steps should be considered when selecting hardware:

1. Obtain minimum and optimum hardware requirements from the vendor (Apple, IBM, and/or compatibles) based on software specifications.

   a. Type of disk operating system
   b. Type of microprocessor
   c. Speed of the microprocessor (MHz)
   d. Amount of internal memory (RAM)
   e. Number and capacity of floppy drives (if any)
      (1) Capacity of floppy disk (double-sided, double density or double-sided, high density)
      (2) Number of disks for 1 year
      (3) Size (3 1/2 or 5 1/4)
   f. Size of hard disk drive for host (file server)
   g. Modem (if dial-up access is supported)
   h. Type of video interface (i.e. VGA, EGA, CGA)
   i. Type of printer(s) recommended
   j. Type of bar code reader(s) supported
   k. Type of bar code recommended

2. Length of warranty for each item of equipment?

3. Cost of hardware and peripherals?

4. Cost of on-site setup for hardware?

5. On-site maintenance agreement for equipment and cost?

6. Is local sales representative knowledgeable and accommodating?

7. Are technicians available for troubleshooting and questions?

8. What specific local area networks (LAN) are compatible with the vendor's programs? What specific LAN configuration is recommended?

9. Supports more than one user and performs more than one task simultaneously (multi user/multitask).

10. Maximum number of microcomputers that can **realistically** be installed on the LAN and used as catalog terminals based on the statistics provided and retaining a 5 second maximum response time for 90% of searches?

11. Data transfer rate (megabits/sec)?

12. Maximum distance between remote terminal(s) and host terminal?

13. Special physical conditions or power requirements needed to support the system?

14. Length of warranty on LAN?

15. Cost of LAN: software, cabling, junction boxes, drop cable, transporter card, etc.?

16. Who will install the LAN and cost?

17. Is LAN sales representative knowledgeable & accommodating?

18. Are technicians available for troubleshooting & questions?

19. Type of backup determined by number of patrons and size of collection:

    a. streaming tape drive
    b. internal or external
    c. storage capacity in megabytes

V. Installation:

Prepare the physical area for system installation with necessary wiring, lighting, telephone capabilities, security, etc. Contact your vendor regarding any special requirements. Plan for networking, traffic flow, workstation furniture, static control, and system expansion. When software and hardware arrive, the following steps should be taken:

1. Check shipments from all vendors for correct items and completeness.

2. Arrange for equipment set up and testing.

   If collection management automation is being installed, complete steps 3-12.

3. Arrange for training and installation of the module(s) on hard drive.

4. Decide upon system options and keep an automation decision log at each site.

5. Install LAN cables if applicable.

6. Fulfill vendor's preinstallation list: read manual, practice tutorial, have hardware in place, have necessary supplies, etc.

7. Perform retrospective conversion including barcode information if installing circulation module.

8. Barcode all items, if installing circulation module.

9. Install the program module(s) and LAN software if applicable, and load data into the hard drive.

10. Key-in patron data, or transfer patron data from the main office if installing circulation module.

11. Plan backup procedures.

12. Obtain full bibliographic records or key-in full bibliographic data for items not converted during retrospective conversion such as non-print materials.

13. Train staff and student assistants.

14. Test all functions. Conduct modified acceptance tests. Verify vendor has met all responsibilities. Accept the system if test results meet specs.

VI. Operation and Maintenance:

If collection management automation is installed, the following steps should be taken:

1. Introduce system to students and faculty.

2. Publicize the system to the community.

3. Edit records as necessary. Maintain the database with records entered, deleted, and revised.

4. Maintain a problem log as needed.

5. Evaluate and make necessary adjustments.

6. Continue the automation process as described in the long-range plans until all phases are completed.

The final steps in any long-range planning process includes reporting annually to the administration and board of education on progress towards the goals and objectives. The plan should be reviewed and revised annually to adjust to changing local conditions. The complete planning process should be repeated every five years.

Implementation of the Statewide Plan

Plans for dissemination of information concerning this project include a report to the State Board of Education and presentations at the Oklahoma Library Association Annual Conference, the annual meeting of the Cooperative Council of School Administrators, and the Encyclo-Media Workshop. The plan will also be shared with the American Association of School Librarians, an article will be submitted to national publications, and the entire document will be sent to ERIC.

Eight regional workshops for library media specialists and administrators will be conducted the first week in August, 1990. The Oklahoma State Department of Education, Library Resources/Technology Section staff and the Automation Task Force Committee will conduct the workshops using this plan as a guide to assist local school districts in automation development.

DEVELOPING A STATEWIDE SCHOOL LIBRARY DATABASE

Establishing a statewide database of school library media center holdings will facilitate resource sharing and serve as a source of MARC (MAchine Readable Cataloging) records for local automation projects. Based on research conducted by the Pennsylvania Department of Education, a CD-ROM database will be the easiest to use and most cost-effective.

Rationale

The National Commission on Libraries and Information Science defines networking as "a formal arrangement whereby materials, information, and services provided by a variety of types of libraries and/or other organizations are made available to all potential users." (Woolls, 1986, p. 44.) Many school library media centers are currently involved in various types of informal resource sharing networks; however, emerging technology and shrinking budgets are forcing all types of libraries to rethink networking and resource sharing.

Developing a statewide database of school library media center holdings will facilitate resource sharing by accomplishing the following objectives:

- increase access to information for students and teachers.
- improve student's information skills.
- promote effective use of resources in school, public, and academic libraries.
- improve management of school library media centers.
- prepare school library media centers for participation in other networks to share resources.

In order to accomplish these objectives, information about school library media center collections must be recorded into a standard format which can be read electronically. This format is known as MARC. A CD-ROM disc is 4.72 inches in diameter and is capable of holding 250,000 pages of information or 540 to 600 megabytes of user data. It is produced by replicating a master disc which is initially expensive. Replication, however, is inexpensive especially when libraries join together to create the master disc. CD-ROMs are searched at the local level by using a microcomputer with a compact laser reader attached. This eliminates the high cost of telecommunications or searching on-line. The laser reader and microcomputer can also be used for other library functions. MARC records on a compact disc provide:

- a cost-effective method of access to a union catalog.
- a method of automating many time-consuming library functions such as cataloging and circulation.
- a method of networking to share resources.

Implementation

With the preparation and presentation of this statewide plan for the systematic development of technology in Oklahoma school library media centers, implementation has begun. In order to continue, a project director's position must be established within the Oklahoma State Department of Education. The director will be responsible for the development of the statewide database and the final production of the master disk. In carrying out these responsibilities, consideration must be given to the following:

1. Seeking participants
   --criteria for participation

2. Budget development
   --initial and ongoing costs
   --who is responsible for costs?

3. Technical issues
   --develop software and hardware specifications

4. Quality control guidelines
   --conversion of catalog and holdings data
   --ongoing maintenance

5. Current trends and future developments.

BIBLIOGRAPHY

Anderson, Eric S. "The Planning Process and Library Automation: Implications for Library Management." *The Wired Librarian's Newsletter*. Micro Libraries, 393 East Horn, Suite D21, Jackson OH 456401.

Anderson, Eric S. "What Users Get From Micro Based Library Automation." *The Wired Librarian's Newsletter*

Anderson, Eric S. *The Wired Librarian's Almanac*. Crystal Lake, IL: Follett Software Co., 1987.

Baumbach, Donna J. "CD-ROM Information at Your Fingertips!" *School Library Media Quarterly*, 18 (Spring 1990): 142-149.

Bocher, Robert. "Automation Concerns That Confront Small Libraries." Wisconsin Division for Library Services, 125 S. Webster St., Box 7841, Madison, WI 53707.

Bocher, Robert. "Issues in Planning and Implementing WISCAT on CD-ROM." Speech delivered at the National Online Conference, NY (October 12, 1988).

Book Report. Carolyn Hamilton, Editor and Publisher. Worthington, OH: Linworth Publishing Co., Vol. 8, September/October, 1989.

Collection Management for School Library Media Centers.. Brenda H. White, Editor, Haworth Press, Inc., 1986.

Discussion Guide for INFORMATION POWER Guidelines for School Library Media Programs. Chicago: American Library Association and Washington, DC: Association for Educational Communications and Technology, 1988.

Doll, Carol A., "School and Public Library Collection Overlap and the Implications for Networking." *School Library Media Quarterly*, (Spring 1983): 193.

Epler, Doris M. "Networking in Pennsylvania: Technology and the School Library Media Center." *Library Trends*, 37 (Summer 1988): 43-55.

Epstein, Hank. "Libraries in the 21st Century.: *Media & Methods*, 26 (September/October 1989): 63-64.

Erland, Virginia K. "Thinking Big and Sharing Expenses." *Media & Methods*, 26 (September/October 1989): 60.

Follett, Charles R., Jr. "Beginning the Automation Journey: A Checklist." *Media & Methods*, 26 (September/October 1989): 61-62.

Information Power: Guidelines for School Library Media Programs. Chicago: American Library Association and Washington, DC: Association for Educational Communications and Technology, 1988.

Library Media Programs in Oklahoma: Guidelines for Excellence. Oklahoma City: Oklahoma State Department of Education, 1990.

Kroll, Carol. "Preparing the Collection for Retrospective Conversion." *School Library Media Quarterly*, 18 (Winter 1990): 82-83.

Kuhn, Carolyn. "CD-ROM Start-Up Challenges." *Media & Methods*, 26 (September/October 1989): 50.

Murphy, Catherine. "The Time Is Right to Automate." *School Library Journal*, 35 (November 1988): 42-47.

Murphy, Catherine. "Questions to Guide Retrospective Conversion Choices for School Library Media Centers." *School Library Media Quarterly*, 18 (Winter 1990): 79-81.

Planning and Role Setting for Public Libraries. Chicago: American Library Association, 1987.

Planning Guide for INFORMATION POWER Guidelines for School Library Media Programs. Chicago: American Library Association, 1988.

Procedures Manual for School Library Media Centers. Oklahoma City: Oklahoma State Department of Education, 1986.

Skapura, Robert. "A Primer on Automating the Card Catalog." *School Library Media Quarterly*, 18 (Winter 1990): 75-78.

Understanding MARC (Machine Readable Cataloging). McHenry, IL. Follett Software Company, 1989.

*Watson, Jane and Robert A. Gray. "School Media Center Software: Management and Skills." *Tech Trends*, (November/December).

Watts, Robert E. "Library Automation: Managing the Future." *Media & Methods*, 26 (September/October 1989): 40+.

Wilson, Savan. "First Steps in Library Automation." *Media & Methods*, 26 (September/October 1989): 62.

Woolls, Blanche. "To Network or Not to Network." *School Library Journal*, 32 (April 1986): 44.

APPENDIX

SYSTEM REQUIREMENTS EVALUATION CHECKLIST

PURPOSE: Use to narrow field of prospective library automation system vendors

NOTE: It is assumed that automation activities will be based on a K-12 District Library Media Long-Range Plan which includes an automation section.

RATING SCALE: 0 = NOT AVAILABLE 1 = IN DEVELOPMENT 2 = AVAILABLE

MODULES:	VENDORS:		
Catalog Maintenance	___	___	___
Online Public Access Catalog (OPAC)	___	___	___
Circulation	___	___	___
Acquisitions	___	___	___
Audiovisual Booking	___	___	___
Serials Control	___	___	___

FEATURES IMPORTANT FOR ALL SOFTWARE MODULES:

*Is menu driven	___	___	___
*Allows integration with all modules	___	___	___
*Accepts entry of MARC records on tape or MicroLIF records on floppy disk from sources such as:	___	___	___
WISCAT	___	___	___
BIBLIOFILE	___	___	___
book vendor MicroLIF	___	___	___
Other _____			
*Allows a library to define specific field, or subfields to be downloaded from the MARC record	___	___	___
*Allows keyboard entry & editing	___	___	___
*Permits global editing	___	___	___
*Generates various reports in flexible formats defined by library	___	___	___
*Provides screens with prompts	___	___	___
*Operates as a union catalog (i.e., identifies holdings of various schools in district)	___	___	___
*Includes database integrity checks (diagnostics)	___	___	___
*Provides protection from unauthorized access (password)	___	___	___
*Provides screens with prompts	___	___	___
*Operates as a union catalog (i.e., identifies holdings of various schools in district)	___	___	___
*Includes database integrity checks (diagnostics)	___	___	___
*Provides protection from unauthorized acoess (password)	___	___	___
*Provides an automated backup process of all data & files	___	___	___
*Accepts automated transfer of patron information from central office	___	___	___
*Allows locally defined fields	___	___	___
*Allows indexing of locally defined fields	___	___	___
*Ability to run on a LAN	___	___	___

CATALOG MAINTENANCE MODULE:

Features Important to Catalog Development:

*Accommodates____unique titles	___	___	___
*Integrates with other modules such as circ, acquisitions, etc.	___	___	___
*Supports a union catalog with dial access capability	___	___	___
*Automatically creates circulation record from cataloging record	___	___	___

*Accepts entry of MARC records on tape or MicroLIF records on floppy disk ___ ___ ___
*Outputs MARC on MicroLIF format ___ ___ ___
*Provides authority control ___ ___ ___
*Creates see/see also references ___ ___ ___
*Allows keyboard entry of catalog data without need to learn MARC format ___ ___ ___
*Prints catalog card sets ___ ___ ___
*Prints spine and pocket labels for new acquisitions ___ ___ ___

ONLINE PUBLIC ACCESS CATALOG (OPAC):

*Integrates with other modules such as circulation, acquisition ___ ___ ___
*Includes user help prompts or help screens ___ ___ ___
*Has easy to follow screen displays ___ ___ ___
*Allows searching by author, title, and subject ___ ___ ___
*Allows library to define what fields should be indexed & searchable ___ ___ ___
*Allows full text searching (any word in record) ___ ___ ___
*Allows full text searching (any word in record) ___ ___ ___
*Allows keyword searching ___ ___ ___
*Allows Boolean logic searching (And, Or, Not) ___ ___ ___
*Allows library to define fields or subfields to be searched ___ ___ ___
*Allows searching with truncation ___ ___ ___
*Indexes authors, titles, subject headings ___ ___ ___

*Permits user to go backward during search without restarting search ___ ___ ___
*Indicates number of entries that matched search ___ ___ ___
*Provides a brief display of titles when more than 1 record matches the search ___ ___ ___
*Provides for a full display of an individual record on request ___ ___ ___
*Indicates location status & availability of item ___ ___ ___
*Prints results of searches

CIRCULATION MODULE:

*Integrates with other modules such as the catalog, acquisitions ___ ___ ___
*Accommodates ____ patrons and ____ titles ___ ___ ___
*Accepts entry of MARC records on tape or MicroLIF records on floppy disk ___ ___ ___
*Outputs MARC or MicroLIF records on floppy disk ___ ___ ___
*Outputs MARC on MicroLIF format ___ ___ ___
*Accepts transactions using a barcode scanner/standards barcodes ___ ___ ___
*Has separate record for each item ___ ___ ___
*Item records are linked to master catalog record ___ ___ ___
*Maximum number of circ: by hour, day, year ___ ___ ___
*Maintains average response time of two seconds during maximum use ___ ___ ___
*Allows entry of patron number once for checking out many items ___ ___ ___
*Retrieves patron record by number once for checking out many items ___ ___ ___
*Retrieves patron record by number and/or name ___ ___ ___
*Displays status of materials on the screen ___ ___ ___
*Displays due dates on the screen ___ ___ ___
*Allows patron records to be created, edited, deleted ___ ___ ___
*Allows locally defined fields in patron record ___ ___ ___
*upon checkout, signals fines & overdues & blocks privileges of patrons ___ ___ ___
*Calculates fines and overdues ___ ___ ___
*Prints overdue lists and notices in various formats ___ ___ ___
*Calculates loan periods by type of patron/item format ___ ___ ___
*Calculates loan periods & due dates by school calendar ___ ___ ___
*Allows different due dates by type of patron & item format ___ ___ ___
*Allows for renewals ___ ___ ___

*Allows for renewals ___ ___ ___
*Allows for reserve materials & lists them on both screen and hard copy ___ ___ ___
*Provides system status report: item in data base, checked out, overdue ___ ___ ___
*Generates circ statistics in various formats ___ ___ ___
*Allows reports by type of parton and item format ___ ___ ___
*Allows inventory with a portable barcode scanner ___ ___ ___

ACQUISITIONS MODEL:

*Integrates with other modules such as the catalog,circulation ___ ___ ___
*Allows searching of an order record in the OPAC ___ ___ ___
*Allows reserves to be placed for item on order ___ ___ ___
*Accepts and differentiates between new orders, gifts, etc. ___ ___ ___
*Allows for electronic transfer of orders to jobber or publisher ___ ___ ___
*Includes a vendor file ___ ___ ___
*Includes a comprehensive fund accounting system & provides account status for at least 25 fund accounts ___ ___ ___
*Allows transfer of funds from one account to another ___ ___ ___
*Allows cross checking of current collection for duplicates ___ ___ ___
*Retrieves order information for duplicate titles ___ ___ ___
*Signifies status: on order, back order, complete, etc. ___ ___ ___
*Retrieves records of materials not received to cancel; retains cancelled order until a library specified time period ___ ___ ___
*Generates various reports in flexible formats ___ ___ ___

SERIALS CONTROL MODULE:

*Integrates with other modules such as the catalog, circulation ___ ___ ___
*Permits ordering, renewing, canceling ___ ___ ___
*Includes comprehensive fund accounting system & provides account status ___ ___ ___
*Provides a serials control record ___ ___ ___
*Includes a vendor file ___ ___ ___
*Generates a cancellation notice for the vendor ___ ___ ___
*Records issues received ___ ___ ___
*Calculates expected receipt dates for issues & alerts ___ ___ ___
staff when issue has not been received ___ ___ ___
*Generates a claim notice for an issue not received ___ ___ ___
*Allows for special and irregular issues ___ ___ ___
*Allows searching of serials records in OPAC ___ ___ ___
*Allows manual check-in ___ ___ ___
*Alerts staff when there is a duplicate issue ___ ___ ___
*Allows for receipt record to cross calendar year ___ ___ ___
*Records bindery information for each volume ___ ___ ___
*Permits inquiry by title,subject, etc. ___ ___ ___
*Permits inquiry for current volume, issues received, lost, etc. ___ ___ ___
*Allows prioritized routing by name, title, department ___ ___ ___

AUDIOVISUAL BOOKING MODULE:

*Integrates with other modules such as the catalog,circulation ___ ___ ___
*Provides features for checking out items & equipment similar to circ module ___ ___ ___
*Provides for difference loan periods, reserves, overdues, etc. ___ ___ ___
*Provides for at least one year advance booking of items & the capability of crossing calendar years ___ ___ ___
*Allows staff to determine type and content of booking files ___ ___ ___
*Allows bookings to be confirmed ___ ___ ___
*Provides for circulation of rental items ___ ___ ___

*Provides for a comprehensive report capability including a list of items booked by title, copy, range of dates, patron, etc.	___	___	___
*Provides for a printed media catalog	___	___	___
*Provides for a vendor file	___	___	___
*Provides for an audiovisual equipment file	___	___	___
*Allows retrieval of audiovisual equipment records by a variety of fields including location, type of equipment, serial number, model number, etc.	___	___	___
*Provides for equipment control (building & district)	___	___	___
*Allows equipment location to be identified by room, department	___	___	___

NETWORKING:

*Supports more than one user & operates more than one task simultaneously (multiuser/multitasking)	___	___	___
*Supports 8 terminals at acceptable response time of 4-6 seconds or less when operating circulation & the public catalog (OPAC)	___	___	___
*Allows for simple installation	___	___	___
*Provides for network maintenance	___	___	___
*Provides for security: password, file locking, read only	___	___	___
*Is compatible with hardware recommended by the software vendor	___	___	___

VENDOR CUSTOMER SUPPORT:

*Provides software warranty & ongoing maintenance program with toll free number	___	___	___
*Continues to upgrade software	___	___	___
*Supports older versions of the software	___	___	___
*Provides installation/training	___	___	___
*Provides hardware requirements & a list of compatible hardware	___	___	___
*Provides easily understood program manuals/documentation	___	___	___
*Provides demonstration disk, tutorial manual	___	___	___
*Has organized user group	___	___	___
*Provides regular newsletter	___	___	___

TOTAL POINTS:

Original evaluation checklist prepared by LInda Stelter, Eau Claire Public Schools, with additions by Neah J. Lohr, Microcomputer Consultant, Bureau of Instructional Media & Technology, DPI; Robert Bocher, Automation Consultant, Bureau of Library Development, DPI; and Helen R. Adams, District Media Director, Rosholt Public Schools (February 1989)

SIMPLIFIED REQUEST FOR PROPOSAL (RFP)

Purpose: After financial backing is assured, use RFP's as a tool to solicit proposals and to aid in the selection of the system that best combines local library needs with system capability.

GUIDELINES FOR PREPARING A SIMPLIFIED RFP

1. Be concise but clear in your needs.
2. Distinguish between necessary and desirable requirements.
3. Be realistic about what technology currently exists and is available. Do not submit a "wish list."
4. Allow vendors flexibility by focusing on what the system should do, not how it should meet the requirements.
5. Base system requirements on district needs; do not submit specifications which are designed to eliminate all but one vendor.
6. Send RFP's to those vendors who met the majority of the requirements on your System Requirements Evaluation Checklist.
7. Allow four weeks for the vendor to respond.
8. Simplify vendor responses by including a rating scale of A = Available, NA = Not Available, D = Under Development, and AM = Available But Modified: and allow space for comments or explanations.

SAMPLE FORMAT FOR SIMPLIFIED RFP

I. District School Library Media Program Profile:
Number of Schools: elementary: middle school: high school:
Current Student Populations: Projected Student Population in 5 Years:
Current Staff: Projected Staff in 5 Years:
Total Unique Titles: Projected Unique Titles in 5 Years:
Total Items: Projected Items in 5 Years
New Titles Added Per Year: New Volumes Added Per Year:
Number of Titles converted into MARC Format:
Distance between buildings (provide school district map)

II. Data for each Building-level Collection & District Central Collection:
Estimate unique titles per collection:
No. of collection types (Ref, A-V, Fiction, etc.)
Estimated volumes per collection:
Number of annual circulations: Anticipated growth in 5 years
Maximum circulations per hour: Per day:
Maximum number of items on loan at any time:
Average number of overdues: Max. number of total reserves:
Fines/overdues procedures: Max. number of reserves per item:
Anticipated number of circ stations: Number of OPAC terminals:
Current student/staff population:

III. Define in general terms what the system should accomplish.

What Users Get From Micro Based Library Automation

by Eric S. Anderson
Editor, Wired Librarian's Newsletter

It is sad to say, but the goal of most micro based library management schemes is administratively oriented, not user oriented. In arabic: most the time, effort, and cash poured into automation usually goes for the library staff's benefit, not for the library user. But in all of my library visits, I have only seen a single information desk in a school library.

I am not trying to single the school people out. It is endemic, in my opinion, that the library profession has gotten so program oriented, or "warm, funky, fun and fuzzy" as Biff and Muffy would say, that we have lost a good deal of the vision of what is is we is all about and why we are doing (or in many cases trying to do) the things we do.

I am unable to recount to you the number of times I have been visiting towns, far and large, and needed some sort of information. In the old days I used to pick up the phone and call the local library. Often I would have to tell the staff there where to find the information I needed - an I am only asking things like the 1980 population of the state of Illinois - and even then many of the folks can't find the info. If I can't make it to the local library to locate myself the needed details, I don't even bother to call.

I also find it interesting that many of these libraries have award winning programs. The irony is so troublesome I would rather spend every LSCA dollar on a dictionary for every citizen then another dime on a computer system. Perhaps we could spend a little time teaching library staff to use them while we are at it.

My point in these long and drawn out paragraphs is that three essential elements have fallen by the wayside.

Most Libraries don't have mission statements
or haven't looked at them since they were cast in stone
Most Libraries don't do planning
or haven't revised them since they were cast in stone
Libraries don't evaluate their performance
often enough to even know what it is they are doing.

Before we can talk about automation or children's services or literacy, you have to identify why you are in business, what you are doing, and what you intend to do.

A mission statement does not need to be a novel from Michener. It should simply and clearly state why you are in business. "The Dakota High School library is organized to meet the informational needs of the students and staff." You can elaborate for another paragraph about supporting the curriculmn, providing information in a variety of formats, etc. etc. etc. But ya gotta write it down and it has to mean something.

The second half of our assumption, the plan, needs to identify elements necessary to carry out the mission statement. From each element you hang goals and objectives and activities to support the plan. All the gigabytes in the world sans plan is worse than a plan and no gigabytes. But ya gotta write it down and it has to make sense.

Before the path gets any more twisted, it is important to revise these documents on a regular (read yearly) basis.

Plans need to be written in the user - read service - mode. Forget these folks and you lose the reason to have a shop at all. Elementary my dear Anderson. But by thinking about planning hopefully a light bulb will go on in your head and focus your attention, as you write and revise you plans, about the folks comin' through the door.

What then can users get from micro based library automation?

There are two basic areas where the micro can provide an increased level of service to the people who use your place.

Better Information / More Complete Information

Information They Never Had Access to Before

Let's take the age old task of teaching kids to use the Reader's Guide to Periodical Literature. You sweat, you slave, and you knock yourself out to teach them the convoluted conventions of an essential library source. Having done it for ten years, I can still feel the pain.

What always happens? The kids that have the hardest time learning it always pick bizarre topics and when they get the hang of it they get all of these really oblique references because somebody in the not so distant past listen to the drivel from State Library Agencies and started gettting the unabridged version of the tool. So here is this kid who has gone through all of this pain and now he/she has a list of references you don't own.

1) **What are you doing with an unabridged version?** Buy tools that make sense for your library or upgrade your periodicals holdings to match the tool. What does your mission statement and your long range plan say about the type and kind of service you are going to provide?

2) **Why isn't the tool marked,** or some other user aid provided to tell the user exactly what your holdings are? Probably because it is a lot of work to keep the information current and available. Why not build a simple data base to check periodicals in and produce, as a by-product a current holdings list you could place next to the tool?

3) **Why not use a CD-ROM version of the tool** that would select references according to the search criteria entered by the user? If they build a "filter" into the product that allows you to create an index to the periodicals you use the screen would display or the printer would print only the items the user could have access to. The next level, for those with creative minds, is to provide the user the option of selecting sources within or outside the library or both with held items in bold. Perhaps if there were a union index for all of the schools in the district / county / region / state you could have an instant interlibrary loan record.

Let's take a more complex issue, a circulation system.

What does a circ system have to do with the mission and the plan for your library? Several issues pop immediately to mind.

Accurate record keeping is essential.
who has what and when is it due back

Items held in the collection are also essential.
In the obverse, a system should tell you what you do not own.

A system should tell you what is in the building.

A system should tell you who is using your collection.

A system should tell you what is being used in your collection.
Low circ figures mean a lousy collection.

Becky walks into the library. The paper card catalog says the library owns "Blubber." She is smart enough to know what the call number means, goes to the shelf and is unable to locate it. She really wants to read this title and asks the library staff to help her find it. A circ system should be able to tell them if the library owns it, where it is located, if it is in, and if not when they expect it back in and "of course they would be happy to reserve it for her."

As you go to implement any sort of automated solution, you need to do some basic evaluation. How much time do you spend on the manual task? How much time does your new automated solution consume? What changes did you make with the way you use your staff, your resources, and your facility to benefit the user?

I can only hope that as you consider automation options for your operations, you remember this age old pharase from graduate school:

"If you have a paper file that works. Use it."

If you have paper files that don't work, or the people who use your place have needs that you are unable to meet in the paper world, then I would strongly suggest that you consider options and alternatives that provide your users what they need.

BEST COPY AVAILABLE

The Planning Process and Library Automation: Implications for Library Management

Eric S. Anderson
Editor, Wired Librarian's Newsletter

I consider myself very fortunate because in my professional library life I have had the opportunity to work with a variety of different libraries in a variety of settings. Many of us live our entire professional lives within a single strand within the profession, and although this provides a great opportunity to be real good at what you do, it also presents a situation where cross fertilization rarely occurs.

I am not speaking about wild times at Triple I conventions. Rather, I am concerned that a narrow focus often eliminates good ideas that develop in other areas of the profession. I am not proposing, nor is it appropriate, to try to run a school or an academic library as one would run a public library. I would suggest that from time to time the focus on the lenses be increased and brilliant ideas from other worlds be considered as viable adaptive elements.

What is the Public Library Development Program Planning Process and why should anyone other than public librarian's care diddly squat about it?

The original planning process, also known as the "green monster", was developed in the late seventies and early eighties as a series of tools to allow public librarians to identify the service groups and clientele they needed to serve. For all but the largest libraries it consumed too many resources, took too much time, and was a real pain in the seater. The idea was sound, and the Public Library Association went to work to revise the original idea into a model that would work in even the smallest library.

The result of this work, the 117 page **Planning and Role Setting for Public Libraries** (Chicago, ALA, 1987, ISBN 0-8389-3341-6, $20) and the companion **Output Measures for Public Libraries**, 2nd Edition (Chicago, ALA, 1987, ISBN 0-8389-3340-8, $20) is two tools that are extremely important for any library manager, regardless of the service populations or the goals of their local operation.

The worth of these books is derived from the logical, developmental approach they provide for any library manager to focus the goals of the program, identify activities to support objectives in support of the goals, and measure the effectiveness of the service provided. It is the process, not the particular "public library" ends used as examples in these titles, that makes them must reading for anyone concerned about providing library service.

"Listen, the next High School over just put up a circ system so we gotta put one up too."

I understand full well the pressure, or unremitting zeal if you will, to automate. If library schools have done one thing in the last thirty years, it has been to effectively preach the gospel of automation. Just like Jim and Tammy Faye, a zealous approach often ends up with a less than desirable system. If you are automating just to automate, would you be interested in some really great farmland I own just south of Chernoble?

Having spent ten years in the school library trenches, I can remember too well the sort of planning I was involved in. Are there enough encyclopedias so the entire eight grade can do their 'country' report? Is six copies of Family Health sufficient to handle the health teachers' busy work? If I was lucky I might have been informed about a new course or new activities the week before the teacher began them. You feel you have won a major war if you can keep the book budget from being the first thing slashed in the new superintendent's "fiscal restraint" program.

If you develop a planning process for your shop, several elements fall out with unsuspecting results. It is one thing to gee whiz an administrator (usually a basketball coach who never made it downstate) with a concise report on why you are in business: what the goals and objective of your shop are. It is another to provide data on a variety of activities your library is involved with and your plans to improve or expand service because you employ a process to plan.

Planning and Library Automation

Anyone who has paid attention to program "standards" should notice that they have moved from input to output terms. I can remember the hoo-ha in my early library life when the "new" edition came out and I had the books and the filmstrip projectors and the videotapes to meet the numbers. In an input world, the number of reference books counts more than the number of questions answered. Do we dare bring up the question of how many answers were correct?

An output world wants to know exactly that kind of information. Circulation is viewed in relation to the number of users. Methods have been developed to statistically identify how well you are doing in a score of different ways. School libraries may not be concerned with adequate parking, but there are many access questions I never thought about in my former life that these monographs raise.

I'm going to cut out so much busy work
and be able to report how many ninth graders
from a certain zip code checked out books on
Zimbavwe that the system makes sense in and of itself.

I will go to my grave contending that libraries exist because of their karma. If the people that use them feel warm and funky and fuzzy about libraries they will support them. An input world makes sense to the statistical crowd. An output world deals with user satisfaction, and there isn't a shop in this world that couldn't use a few more comments in the staff room of a school about how neat the service was in that school's library.

To this point I have refrained from mentioning automation, and for good reason. Automation is part of an overall program. One automates a library to provide better service, or to provid a service that is not possible in a manual world. If library users are not the reason for automation, then I would not care to do it.

The input world only cares how many terminals you have. The output world worries about how happy the folks are in using the terminals. If you automate for the input world, you will have a system that fits the library administration's needs. Wire up for an output world and you have a different rationale altogether.

"I don't have the time, the resources, or
the ambition to involve myself in the planning process.
It simply is too much work in an already
overworked world."

I don't want to come off sounding like a yuppy, but if you don't make time to plan, and you don't take time to plan, you are in a continual fire fighting mode. Lord knows I understand how the bulb burns out on the 16mm in Ms. Smith's room right in the middle of your library instruction session for the Junior's. If you had suckered some good student help in from study hall, trained them how to change bulbs, and gotten permission for them to roam the halls providing this valuable service to our civilization, it would be less of a problem than it may seem.

To steal some words from my boss:

"If you don't know where you are going tomorrow, how can you open the doors today?"

The first mental hurdle to clear is that unless you live in a neighborhood that has a great number of unemployed stone carvers and where that is the normal mode for document delivery, plans are usually not done in granite. Planning is a process, with numerous opportunities for revision or change. It is the future focus that counts. Planning is a logical direction for your shop.

Okay Eric, I'll eat the whole banana.
I'll buy into the process. What's Next?

The process has seven distinct steps, as illuustrated in the overview chart on page 4. It contains enough educationaleze that school folks will feel comfortable with it, and is done in clear enough language so that the normal world can understand it.

Planning to Plan

The first step, "Planning to Plan", is an inhouse organizational activity that gives the process form. It is extremely concerned with tailoring the process to the individual library's need. It details who will be involved in the planning process and why it is being undertaken. Perhaps you need to clarify the value of the library, evaluate specific library services and activities, aid in resource allocation, establish service priorities, or perhaps secure additional revenue to support the program. You decide how much effort you will put into the process. Each step has a clear "level of effort" definition which you may decide to vary from step to step. It is important to identify what resources such as staff time, training, or perhaps consultants will be put into the project. At this step you develop a schedule for planning, and develop a strategy to educate those who will be involved in the process.

For those who have never done long range planning, it is more than appropriate to start small and work your way into the process. In a school library, perhaps the librarian and an administrator could work through the process the first time. I also need to encourage you to start small and get comfortable with the process. If you really get into it, do it with more verve the second time around. It is OKAY to identify one goal with one or two objectives the first time around.

Looking around

This activity in particular is rarely performed by many librarians, especially in the school breed. "Information about the library helps you understand how well the library is doing its job. This information assists the planning process by identifying factors in the library's environment that may affect the provision of services; reveals community needs for library services; and suggests possible library roles, goals, and objectives." [1]

In a basic mode, if a library director were to undertake the steps necessary to complete Workform C, (attached) they would begin to see how their shop fits into their own little world. In a small public library this is the community. In a school library this is the institution.

The process assists you in deciding what information you need to gather, gives aid and comfort in the gathering , and helps you evaluate what you find. Workform D, "Translating the Findings" is a neat matrix that lays out your major findings, the impact of the findings, opportunities and possible library responses.

The Library Role

The next step identifies what the library is going to assume as its role. "Why are we in business ?" A question we rarely ask, but one that unanswered keeps us keepin' on. At this point the PLDP manual is very " public library" oriented, but it takes only a limited amount of imagination to work these roles into a school setting.

The role consideration leads to drafting a mission statement. A simple declarative "this is why we are in business" announcement of what the shop is supposed to be doing.

"The Zambesie high school library provides informational sources and services to support the instructional goals of the school." It's not so tough to say what you are doin' once you think about it.

Goals and Objectives

Without a role, the next step, writing the goals and objectives of the shop, is done in a vacuum.

The caution is to start small, identify a single goal and write three objectives to accomplish it.

To this point we have avoided mentioning automation specific material. It is simply because until you commit yourself to goals and objectives automation does not come into play. Until you know where you are going, and why you are going there automation plays no part whatsoever. To automate to automate provides neat hardware and fun but exists in its own universe.

Taking Action

At this point identify activities to support the objectives you have developed. It is important to understand the difference between supporting an existing program or if the activity is a new service. The PLDP manual identifies four categories of activities that :

"Increase the frequency with which current clientele use existing library services

expand new clientele using existing library services

encourage existing clientele to use new library services

encourage new types of clientele to use new types of library services" [2]

The process walks you through identifying, and selecting possible activities. When these activities are identified, you develop an implementation strategy. The implementation is then monitored, a perfect time to review the objectives.

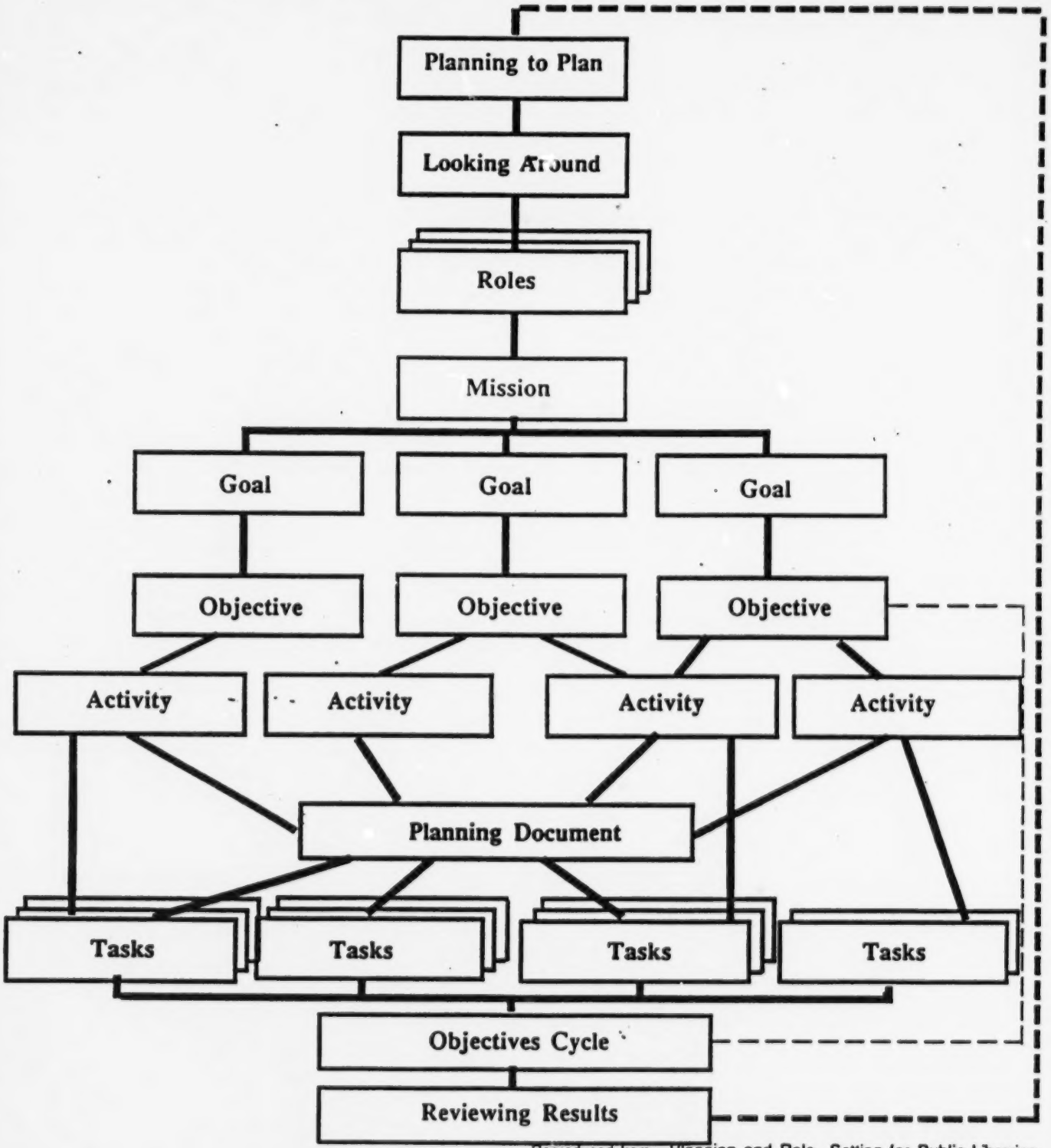
Writing the Planning Document

At this stage you should be ready to commit your labors to a written form. At the basic levels the task is assigned to one person to create not only a record but a design for the future of your shop. Once drafted, it should be reviewed by those who have been involved in the process before it is formalized. Once this has taken place don't let the plan languish as an achievement: get your governing body (library or school board for most) to review it, discuss, it and accept it formally.

Reviewing the Results

You need to remember the process is cyclical. Once a planning document has been created you should review the process and implement the changes

An Overview of the Planning Cycle



Reproduced from Planning and Role Setting for Public Libraries
Chicago, American Library Assn., 1987
ISBN 0-8389-3341-6

Micro Libraries 393 E. Hur on Suite D 21 Jackson, Ohio 45690

you have designed. The process of evaluating the document then cycles you back to the Planning to Plan stage.

Eric, do you mean to tell me that to put up a circ system or use some catalog card production software I gotsto involve myself in the ultimate library headgame of the century?

First, and foremost, it doesn't matter diddly whether you are going to automate or add another set of encyclopedias unless you understand why the action will be taken and what effect that action will have on the service you provide. Common sense tells you that the '72 imprint on the World Book's makes them a little stale these days, but service questions do not come down to the question of imprint. To operate you must effectively plan.

Planning also identifies what you are currently doing. Although I will avoid a detailed discussion of the "Output Measures" process, it is critical to measuring what you do and how well you do it. The last part is the operative, and may lead you to layering automation activities into your goals and objectives.

The inter connection of activities with program is where most folks fail when they automate. Universally, they underbudget, understaff, and run over timelines in the process. Far greater a sin than these simple administrative woes is the failure to plan the impact automation will have on library users.

Enough Esoterica Eric,

Why donnya give us some examples?

Let's take some basic examples of statistical measures of library performance and brainstorm the impact automation can have on them, above and beyond the simple counting necessary to accomplish the measure.

Turnover rate is the number of circulations divided by the number of items held. If you are plopping along down in the twos and threes you have to take a real look at what it is your library holds and why it is circulating so infrequently. More than likely dead Dewey sections are caused by junk - junk which if replaced would be used more frequently than your current holdings. If a circ system provides a Dewey report, you can see what is moving and more importantly, what is not.

Title fill rate is a basic measure of specific titles sought that a user found during a visit. This is going to give you a good idea of your circulation range. When automation provides the easy ability to reserve replacing the antideluvian labor intensive gain, watch your reserves skyrocket. At what point do you order multiple copies? Four reserves? Eight reserves?

Subject and author fill rate identify the number of items found in a user visit. I still am waiting for an automated system that "remembers" no hits and reports them to staff for collection development purposes. Regardless, the results of such a survey are roadsigns for what you own.

Reference completion rate measures the number of reference questions that were asked and completed within a given time period. Oh, I forgot, school libraries don't have information desks? Are we still fighting the Bibliographic Instruction Wars?

What about using a microcomputer and data base software to manipulate Interlibrary loan requests? You might discover that a lot of the stuff you borrow should really be bought.

What happens when you include online searching as a user service and you don't have the periodical titles to supply the hard copy for the citations? Will this impact on what you buy and why you buy, or do you merely expect some Title III funded resource sharing network to do your work for you?

Drop Dead Eric. It ain't worth it.

Many of you will walk away from this discourse with no plans to plan, no desire to develop objectives and activities, and not even the slightest desire to consider planning as a strategy you will employ in your shop. Most librarian's don't plan at all, and perhaps that is why so many libraries are mediocre.

I used to work with libraries who wanted to automate but would refuse to do long range planning. Many of the those folks have hacked up solutions providing minimal results and providing few, if any benefits to the library users. Nowdays, no long range plan, you swill your own slime.

The worst thing you can do, from a guy who has set up one heck of a lot of library automation shops, is to automate in a vacuum. The only way I know to let the air out of the bag is planning. It is simple: automation is involved as an activity of derived from planning. Planning is not an activity of automation.

Notes

1 Planning and role setting for Public Libraries, Chicago, ALA, 1987 pg. 15

2 Ibid. pg. 58

STEPS IN DEVELOPING A LONG-RANGE PLAN

1. Obtain authorization from the superintendent to appoint the committee.
2. Form a library media program long-range planning committee consisting of representatives of the faculty, administration, library media program staff, students, and community members.
3. Meet initially to discuss the committee's charge and decide upon the best way to proceed. Review long-range plans from other similar sized districts and various planning processes. Establish a timeline for completion of the plan.
4. Develop or revise a library media program philosophy based on the district's philosophy. Distribute the proposed philosophy with the needs assessment for additional input and comment.
5. Conduct a needs assessment for each building-level program using any locally chosen tool such as the School Evaluation Consortium library media program evaluation survey, or obtain other needs assessment instruments from the Department of Public Instruction's Bureau for Instructional Media and Technology or library media professional organizations.
6. Finalize the statement of philosophy.
7. Tabulate the returned needs assessment surveys and give the results to the committee for study and discussion.
8. Determine and write the status report on the following five areas: collection, services, staff, facilities, and equipment.
9. Use the needs assessment results to determine the needs of the district-level and building-level library media programs.
10. Prioritize the needs for each building-level program and the overall district-level program.
11. Write goals and objectives to meet the recognized needs, or write recommendations for improvements covering library media collections, services, staff, facilities, and equipment.
12. Determine the estimated costs and the timetable to accomplish the objectives or implement the recommendations.
13. Write a summary of existing policies, noting those which need to be revised as well as any which should be added.
14. Write the introduction and concluding statements. Prepare materials for the appendices as desired.
15. Finalize drafts, checking for clarity, completeness, spelling, and grammar.
16. Introduce the plan to the faculty to gain broadbased support for the plan.
17. Present the plan to the board of education for discussion and adoption.
18. Report annually to the administration and board of education on progress toward the goals and objectives.
19. Revise the plan as needed to adjust to changing local conditions.
20. Review and rewrite the plan every five years by completing steps 1-17.

Developed by Helen Adams, Rosnolt Public Schools, Rosnolt, WI, March 1988, for the Wisconsin Department of Public Instruction.

A Primer on Automating the Card Catalog

ROBERT SKAPURA

When I travel to out-of-state conferences, I am frequently approached by librarians who notice from my name tag that I'm from California. They assume that because I'm from the West Coast, and especially because I am close to Silicon Valley, my library must be on the cutting edge of library automation and information retrieval. In reality some of the most exciting projects are those happening outside of California where a large part of the school library world is poised to make the next great leap in library automation: the computerized card catalog. And surprisingly a substantial number of school libraries have already made the jump.

IMPROVING STUDENT ACCESS TO INFORMATION

It doesn't matter what you may have already done in library automation. It doesn't even matter if you've done *nothing*. As a matter of fact, many libraries manage overdues and other tasks quite well with handwritten or typed notices and lists. But the lure of a computerized version of the traditional card catalog is something that makes most librarians dream: a search tool that students find easy (almost intuitive) to learn, that automatically goes to "automobiles" when the student types in "cars," that suggests other possible subjects, that tells the student whether the book he finds is on the shelf or has already been checked out, and then shows him on a superimposed map of the library where the book can be found. That dream is not five years away. Over 60 percent of the secondary school libraries in the state of Pennsylvania, for example, already have CD-ROM catalogs in place.

The idea of a computerized catalog is appealing to school librarians because we all know down deep that for our students the traditional card catalog has never been more than a *partially successful* search tool. No matter how well we instruct our students, there are inherent limitations to the card catalog itself. Every student search is based on whatever is on the first line of the catalog card (a subject, an author, or a title). Picking the "wrong" subject, misspelling the author's name, or knowing only a few words from the middle of the title leads the student nowhere.

Because of our background and the years we have spent using the card catalog, we make it look easy, the same way a professional golfer who sinks an uphill thirty-foot putt makes his task look effortless. Because we are "culturally" literate, we bring to every search more than just the one or two words in a subject. When we move so quickly from the request to the card catalog and then to the shelf, we leave our students standing there amazed.

Now we cannot give our students our years of background and experience, but we can give them a search tool that does not depend so much on life experience to be successful. I am not so naive as to think that a computerized card catalog will solve all our problems. It won't, and it will probably create a few new ones. But it will remove many of the built-in obstacles that have frustrated our students in the past.

I suspect that a computerized card catalog will have the same effect on student searches as word processing has on student writing. Teaching a student word processing *does not* automatically make a student a better writer. It does, however, make the *act of writing* easier, and teachers who have incorporated word processing as part of their composition classes have been generally pleased with the effect it has had on student attitudes and their willingness to edit. And the most dramatic improvement in student attitudes seems to be with the lower-ability students. In the word processing classes I have taught, I especially enjoy watching the faces of my students the first time they see a spell checker scan their writing and then "suggest" replacements. They can "feel" the power this new tool has given them.

A computerized card catalog will make the *act of searching* easier. It will allow a student to scan quickly a thesaurus of related subjects or to search a title that contains a particular word (not just begins with the word). It will show the closest match to an author's name followed by the ten before and after alphabetically; most catalogs can even search the note fields as well as the title and subject.

Both the local university and the county library system in my community now have computerized card catalogs. Trickle-down automation means that their collections may soon be in reach of the school library.

CONVERTING TO A COMPUTERIZED CARD CATALOG

Once when I was giving a talk in Los Angeles on library au-

Robert Skapura is Librarian at Clayton Valley High School, Chair of AASL's Technology Committee, and Editor of the CMLEA Journal.
The information in this article previously appeared in CMLEA Journal, *Fall 1989.*

"Reprinted with permission"

That process of converting the information from a paper shelf list to a computer readable format is called retrospective conversion.

tomation, a librarian raised her hand and asked, "But how does the computer know what books are in my library?" She went right to the heart of the problem. The answer, of course, is, "It doesn't. You have to tell it." And that process of converting the information from a paper shelf list to a computer readable format is called *retrospective conversion*. In many other states, the state department of education has helped organize and finance "retro projects." School libraries in those states could then take advantage of the tremendous discounts that are given when the number of volumes converted is very large.

Not all school librarians work in a state with strong leadership at the state department level. Librarians wishing to explore the possibility of a computerized card catalog must then gather the information on their own and develop a plan that will convert their paper records to a machine-readable format.

Using the MARC Format

The task of converting a paper shelf list to a form that a computer can read is like putting bar codes on all your library books; it's so awful, you don't ever want to have to do it again for the same collection. To insure that the first time you convert is also the last, it's important that the information on your shelf list is put into a standard format. Since the 1960s that standard format has been MARC records. The term "MARC" stands for the phrase "MAchine-Readable Cataloging Records." The Library of Congress originally devised this standard format to share cataloging information with libraries using large mainframe computers.

It's not necessary that you understand the technical aspects of MARC records (tags, subfield codes, headers). It's enough that you understand conceptually the importance of the MARC standard. A good analogy comes from the field of word processing. Every word processing program writes out a document on a floppy disk in a slightly different way. This means that a person using *AppleWorks* cannot just give a disk to a person using *Word Perfect* and expect that person to use it in his machine. If everyone is using the same word processing program, however, everyone can share information with everyone else, easily and directly.

A homegrown computerized card catalog . . . will . . . be an isolated system if it cannot read in and write out MARC records.

It certainly is possible to develop a homegrown computerized card catalog and to type in the bibliographic information in the same way that you type words into a word processor or information into a database. This is not to say that a homegrown system will not work well. It will, however, be an *isolated system* if it cannot read in and write out MARC records.

Putting your records in MARC format opens the door for cooperative ventures with other school or public libraries. Until about two years ago, computerized card catalogs were put on hard disks and linked with a number of microcomputers through a local area network. Now there are other options. Many schools are currently looking at CD-ROM based catalogs because they're so rugged. A CD-ROM disk can hold hundreds of thousands of titles, but the cost of pressing a single master CD-ROM is over $2,000. After the master is pressed the copies are quite inexpensive, but few school libraries could afford to press a master each year. Twenty school libraries, however, could easily put their collections on a single CD-ROM and share the cost of the master. The software can be told to "mask" all the schools but yours, so students searching the system will see only the books from *your* library, even though there would be twenty collections on the same CD-ROM disk.

Shared ventures like this are only one reason to adhere to the MARC standard. Book vendors can also deliver MARC records on a disk with any new book order so that the information can be automatically added to your computerized card catalog. That means you won't have to key information about your new books into your system.

Adhering to a standard is also insurance for the future. If you ever outgrow your system or your vendor goes out of business, you will be able easily to load your MARC records into any other system.

Choosing a Conversion Method

Even though there is only one standard (MARC) for retrospective conversion, there are a number of ways of making the change from paper to electronic records. It's like travelling from point A to point B. You can walk, you can ride, or you can fly. Or you can travel one way for part of the journey and another for the rest. There are basically three methods of converting your paper shelf list to MARC records.

- You do *all* of the work.
- You do *some* of the work.
- You do *none* of the work.

MARC records can be put on either floppy disks or nine-track tapes. The nine-track tapes are used by large mainframe computers to read data very quickly. Only large companies can produce and read them. MARC records created on a microcomputer will be saved on floppy disks. It doesn't really matter what media the records are stored on. Most companies can transfer from one to the other, although there might be a small charge to go between the two.

Most libraries select the computerized card catalog system before beginning the retro project. Many companies that sell computerized card catalogs also sell retrospective conversion services or products, but these two things can be viewed separately. It is quite safe to use one company or product for the conversion and another for the actual catalog. You can actually start to convert your records into MARC format without having chosen a card catalog vendor yet, since all the companies read MARC records and the conversion project will take many months or perhaps years if you include weeding the collection first. [See "Preparing the Collection for Retrospective Conversion" on pages 82–83 in this issue.]

Needless to say, conversion on site requires the least expenditure but takes considerable staff and time. Conversion done entirely off site costs the most but requires the least staff and time. A conversion project like this, however, is a one-

There are a number of ways of making the change from paper to electronic records.

time expense, and frequently it's easier to find funds for a special project instead of hiring extra staff.

You Do All of the Work. There are a number of products that make on-site retrospective conversion possible. One such product is MITINET/marc, a software package that runs on IBM, Apple, and Mac computers. It presents the user with screen prompts (Title, Author, Call Number, etc.) instead of arcane MARC tags (see figure 1). After you fill in the screen, the program writes out the data on floppy disks in MARC format. Many librarians may reject this method out of hand because of the amount of data that must be typed in. But no matter what *other* method you choose, there are always a number of titles that vendors can't find. So this product can be used in conjunction with others to complete a conversion.

A second way to accomplish in-house conversion is to match your shelf list against a large MARC database. The most popular method currently is to use a CD-ROM-based product (*Bibliofile* or *Laser Quest*, for example) that pairs an IBM PC (or clone) and a Hitachi CD-ROM player. The typical CD-ROM database contains three to six million bibliographic records. Some contain only the original MARC records; others contain both original MARC records and records contributed by other libraries. The match is done by typing in a number (ISBN or LCCN) or a combination of author or title so that the computer can display its record that matches the book on your shelf list. After you verify that the two match, you can then add your local information (call number, price, bar code number, etc.) and write the record to a floppy disk. You can save about 200 MARC records on each floppy disk. With this method, if the CD-ROM database finds your shelf list title, the amount of typing is relatively small.

You Do Some of the Work. With this method the MARC records are actually created by the vendor off-site. You must, however, tell the vendor what books you have. This is usually done by typing in the LCCN or ISBN numbers on a special disk called a "batch disk." You must also type in your local information (call number, price, etc.). This is fairly fast, but since you just type in a string of numbers (ISBN or LCCN), there's no way to tell if you've made a typo until the mismatch comes back from the vendor. Finding the errors and correcting them can be time-consuming.

If you already have a circulation system installed, there's another way for you to do just "some of the work." It's possible to expand your brief circulation record into a full MARC record (see figure 2). For example, those libraries using Winnebago or Follett circulation systems can employ this method. The circulation record must, however, contain the LCCN or ISBN. Once that's done, the backup disks to the circulation system can be sent off to the circulation vendor and MARC records will be returned on either floppy disks or nine-track tapes.

You Do None of the Work. If you can overcome the naked feeling of being without your shelf list for awhile, the easiest method is full vendor conversion off-site. The vendor takes your shelf list and returns it to you in six to eight weeks along with MARC records on either floppy disks or nine-track tapes (see figure 3). Most vendors require a sample of your shelf list before they will quote you a price because the amount of work they must do depends on how good (consistent) a shelf list your library has maintained. Some vendors have done whole states. Of course, the unit price goes down as the number of libraries in the contract goes up, so it's always best to be part of a large group in a conversion project.

There is no one method that is necessarily superior to another. Everything depends on the size of your collection and the size of your staff and budget. The end product of any of these methods that convert records to a MARC format will, however, insure the possibility of shared resources, compatibility with future developments, and a guarantee that you'll never have to enter your collection information again.

[The article in this issue entitled "Questions to Guide Retrospective Conversion Choices for School Library Media Centers" on pages 79–81 provides specific guidance for those beginning the automation process.]

BEST COPY AVAILABLE

Preparing the Collection for Retrospective Conversion

CAROL KROLL

Your superintendent calls you into his office, chats for awhile, and then begins to talk about library automation. Neighboring districts have begun the conversion process, and he wants his students to have equal access to his district's collection. You've been sending him information for the past two years and are eager to begin. Suddenly, you are one of the thousands of school library media specialists across the nation involved in the automation process.

School library media specialists express many reasons for automating their collections: to manage circulation tasks more efficiently; to improve access to the collection and teach users basic searching techniques; and to be able to analyze their collections in order to improve collection development and more effectively meet curricular and leisure reading requirements. School library media specialists want library patrons to use the collection to develop a love for reading and to become proficient researchers and lifetime learners.

How well these goals are met with an automated catalog is to a large measure determined by the care with which the database is converted, the quality of the database against which an individual library's holdings are compared, and the selection of automation software and hardware. The quality, accuracy, and ease of database development will be determined by actively planning the entire process, weeding, standardizing the content of shelf list cards, and evaluating placement of books, special collections, and audiovisual materials.

PLANNING THE CONVERSION: STANDARDIZATION

Planning for automation is a long process. While library staff members become familiar with computers, educate themselves about automation, and begin to talk about the advantages of guided searches, districtwide planning for collection development should take place. Even in those districts with no plans for automation, standardization of the classifying process and thorough weeding and inventory control should be initiated. Districtwide union catalogs will require uniformity, and implementation of standard headings will make eventual retrospective conversion projects easier.

Vendors should be informed of districtwide classification decisions. MicroLIF tapes, which will eventually be used to develop district databases, should be purchased from the vendors when books are ordered and put aside until retrospective conversion is initiated. During the conversion process, the MicroLIF tapes will be converted to full MARC records (if not already complete) and merged with older holdings.

Standardization of location headings is another crucial decision at this point. Many online catalog and circulation vendors will enter bar code numbers directly onto the database. They will also assign bar code numbers reflecting the location codes and type of media. If location codes have been standardized, bar codes will be accurate and in correct order; bar coding of books will be easy. If, on the other hand, some biographies are entered as B, others as 92, and still others as 921, the database will be returned to you with these inconsistencies. Biographies will be listed in three different places on the shelf list printout, which you will use to bar code your books.

Since each book in the shelf list is recorded during the conversion process, decisions must also be made about multiple copies (of paperbacks and regular books), differing editions, and differing formats. Will they be locally entered later or as part of the conversion process? If the numbers of copies have been added to each shelf list card to ensure that shelf list cards truly reflect proper editions, records will be accurate and the collection will be easy to bar code. Standard headings for location codes, media, and computer software are available from the American Library Association.

Consistency in the number of Dewey Decimal places, location code, and number of letters included in entries is crucial since failure to standardize will result in improper placement of the materials within the computerized shelf list.

PLANNING THE CONVERSION: NETWORKING

Many school library media specialists are forming networking groups to share concerns and experiences and solutions as they begin to contemplate automation. Discarding large numbers of books and changing processing policies aren't as threatening when the philosophy and practice are grounded in a regional procedure.

Peer support is particularly important for weeding decisions. A school library media specialist in a central high school district in New York State just discarded 6,000 books from her 18,000-volume library collection using a regional

Carol Kroll is Director, Nassau School Library System, Carle Place, New York.

"Reprinted with permission"

Many school library media specialists are forming networking groups to share concerns and experiences and solutions as they begin to contemplate automation.

procedure as a guide. A high school and middle school media specialist organized a series of weeding workshops for their peers throughout Nassau County, New York, and are initiating "weeding parties." Teams of school library media specialists assist each other in developing standards for weeding and in making difficult discard decisions.

Elementary school library media specialists are re-evaluating purchasing procedures and cataloging as they begin to plan for library automation far in their future. School library media specialists are joining together to coordinate collection development, to standardize location codes, and to ensure a uniformity they never before considered desirable. They are beginning to view the automation of their library as part of a larger process of districtwide and regional sharing. Collections that have been converted using standard records and standardized location codes and subject headings will be ready to be merged as part of an interlibrary loan plan.

PREPARING THE COLLECTION: WEEDING

As we begin to consider library automation, we need to re-examine our collection and how its records are maintained. Ideally this process takes place long before approval to automate has been received. Getting the collection ready for automation is usually part of a three- to five-year plan for library automation. Weeding, inventory, and standardization of the shelf list cards are as significant in the automation process as are retrospective conversion, selection of an online catalog and circulation system vendor, and the purchase of hardware.

Care to maintain a quality collection takes on new meaning when the cost of entering a title into the database is considered, especially when the title is discarded a year or two later. Knowledge of curriculum trends, the direction of the district's instructional program, class size, departmental plans, and possible interdisciplinary focus should be considered when evaluating a library collection. Criteria of attractiveness, accuracy, authority, tone, and format must be considered in addition to other standards in inventory and weeding procedures. Policies for weeding and inventory should be written or re-examined so that procedures are consistent.

Know your collection. Books that are badly worn or unused should be carefully examined. Simply placing titles into a database will not make them more attractive to users. But previously hard-to-find materials might now be located by key word searching, thereby opening the collection to users. The media collection, vertical file, and software collection should be evaluated to determine if they should be included in the database.

Weeding, inventory, and standardization of the shelf list cards are . . . significant in the automation process.

PREPARING THE COLLECTION: INVENTORY

The inventory control for the library collection is the shelf list. Although all library media specialists try to keep accurate records, maintenance of the shelf list is often not a top priority item. Lack of adequate support staff has caused spotty weeding and inventory, inconsistencies in recording Dewey numbers, location codes, dates of publication, numbers of copies and in some cases paperback or hardcover editions. The absence or presence of ISBN and LCCN numbers has not been considered. Although many of us have tried to keep up with local subject headings, lack of an easy process for authority control has resulted in many headings leading nowhere. Location headings are often inconsistent and Dewey numbers are extended to varying decimal positions.

As school library media specialists retire, switch schools, or leave the profession, we inherit collections replete with errors and sometimes add to them in our haste to meet student and faculty needs, rather than become bogged down in clerical tasks. Most school library media specialists haven't spent much time learning about resource sharing, *AACR2*, authority control, or MARC record fields. Our priorities are now changing.

We inherit collections replete with errors and sometimes add to them in our haste to meet student and faculty needs.

The accuracy of the shelf list card will help determine the ease and quality of the conversion process. A thorough inventory is crucial since titles cannot be entered into the database without shelf list cards, and shelf list cards without books should be discarded or new books that reflect those cards should be purchased. Series and serials and special collections should be re-examined as to their preferred placement in the collection. As weeding and inventory take place, the shelf list card should be carefully examined for compliance with the book to be sure it includes:

- accurate citation information;
- ISBN or LCCN number for each edition, paperback and hardcover copy—with vendor keying in particular, a check mark or date next to the number won't ensure its entry into the database;
- consistent Dewey numbers; numbers within the same classification must be extended to the same number of decimal points to avoid bar coding problems;
- consistent recording of author's name and biographees to one, two, or three places;
- standardized location codes.

SUMMARY

Experience has shown that mistakes are not easily corrected once they have been entered in an automated card catalog or circulation system. It's far better to prepare the collection before retrospective conversion by weeding heavily, developing accurate standardized shelf list cards with an entry for each holding, and standardizing entries within the district or region. By such preparation, a less costly, more accurate, and easier retrospective conversion procedure will be assured.

The Time is Right to Automate

by Catherine Murphy

"This is an exciting time... because the technology, while costly, at last promises to deliver real improvements in the managing, indexing, and retrieval of library materials."

IN 1988, automation of the card catalog has become a reality for many school library media centers. In 1985, when I was conducting research on the standardization of cataloging in microcomputer online public access catalogs (OPACS) in school library media centers, I found that only about 160 school sites with stand-alone circulation and catalog systems could be identified by vendors selling to this market in the United States and Canada.[1] The reasons for today's increased interest in automation can be attributed to technological developments that permit easier use of systems, expanded capabilities in searching and reporting, and interfaces between stand-alone microcomputers and distributed networks or compact disks. In addition to these improvements in the technology, vendors are providing services for retrospective conversion, providing options that are geared to different budgets in the school market.

It is barely 10 years since the Apple was introduced in 1978, presenting an alternative to automation that was affordable for small libraries. The big online circulation systems had been introduced into university and other large libraries in the early 1970's and several years later some of these systems had grown into online catalogs for the public, influenced by the growth of online Machine Readable Cataloging (MARC) databases available from bibliographic networks and utilities, e.g., the Online Computer Library Center, Inc. (OCLC).[2] But, almost exclusively, the OPACS were turnkey systems developed by vendors into complete packages of hardware, software, training, and support. The minicomputer systems were too powerful and expensive for most school library media centers or any small library to consider. By 1981, *Computer Cat* was developed by the Costas for an elementary media center in Mountain View, Colorado,[3] and soon after that, there were a number of scaled-down OPACS designed for the microcomputer.

The early software for microcomputer catalogs promised new directions for school library media centers via improved library management and enhanced services to clientele. Most of the systems were essentially replicas of the card catalog, with searching options limited to first word or letters of the author, title and subject, perhaps with other fields available in the non-public mode. Few of these stand-alone microcomputer OPACS offered key word or Boolean searching, processing was slow, and conversion of card records to electronic format was limited to manual data entry. In the last seven years, the technology has advanced, and the market has been tested enough by both vendors and school library media specialists, to have caused an increase in sales of both microcomputer stand-alone systems and distributed network systems.

Although it is difficult to get exact figures for these sales, a few microcomputer systems vendors estimate their numbers of users in the thousands, while a number of others report hundreds of sales. It is probable that at this time there are 10,000 automated circulation and/or catalog sites in schools.

School library media specialists must plan carefully for automation, considering global issues as well as specialized needs, not only to participate in the automation revolution but to take a leading role. As sales increase, the market is correspondingly anxious to meet those special needs.

Catherine Murphy is Director of Library Media Services, Tree Village Central School District, Setauket, NY

 Reprinted from School Library Journal Nov. 1988.

TABLE I

Microcomputer Integrated Systems

Vendor	Hardware	Modules/Price	Notes
Charles Clark Co., Inc. 170 Keyland Court Bohemia, NY 11716 (800)247-7009; (516)589-6643	IBM & compatibles	Molli Circ/Catalog $1500; Circulation only $750; Multi-User System $2495; Marc Utility $200	Vendor conversion options
Columbia Computing Services, 8101 E. Prentice Ave. Englewood, CO 80111 (303)773-6440; (800)663-0544	IBM & compatibles	Columbia Library System Circulation $1095; Catalog $1325; Acquisitions $1325; Serials $545; MARC Records Interface $545	Formerly *Ocelot;* school adm. programs also sold; conversion options
CASPR (Computer Advance Software Products), 10311 S. De Anza Blvd., Cupertino, CA 95014 (408)446-3075	Macintosh	Mac Library System $1695 single user, $4995 multi user plus $195 per terminal; MacCards (library card & label production system) $169	New; a few school users
COMpanion Consulting Corp., 10101 Bubb Rd. Cupertino, CA 95014 (408)446-9779	Macintosh	Mac Book, Mac Book II, and Mac Book II Plus, $995 to $5995 depending on circulation, cataloging or catalog, single or multi-user options	New; several schools in CA; online bulletin board, almanac and support
Data Trek, Inc. 167 Saxony Road Encinitas, CA 92024 (619)436-5055; (800)876-5484	IBM & compatibles	Card Datalog Circulation $995; Card Datalog Catalog $995; Card Datalog Acquisitions $995; Card Datalog Serials $995; $2495 for 3 modules (special prices for schools; will change 12/31/88)	Databridge MARC Conversion & Ultimate Searching Module (very flexible)
Follett Library Software 4506 NW Highway Crystal Lake, IL 60014 (815)455-4660; (800)323-3397	IBM & compatibles (Apple-Circ Plus only)	Circ Plus $995; Cat Plus $795 until 12/31, $1295 thereafter; Textbook Plus $1695 (software only)	Vendor conversion options; enhanced bibliographic records, e.g. grade level
Library Automation Products, 875 Avenue of the Americas New York, NY 10001 (212)967-7440	IBM & compatibles	The Assistant $6,270; Individual modules, single user $1800, multi user $2500 (Acq., Cat., Circ., & Serials)	Most libraries are corporate or special, a few schools.
Library Corp., Inc. One Research Park Inwood, WV 25428 (304)229-0100; (800)624-0559	Hardware Inc. with software for catalog; IBM & compatibles for circulation and catalog maintenance	Bibliofile Intelligent Catalog $2770; Bibliofile Circulation (w/o hardware) $3500 one time; Bibliofile Catalog Maintenance $975 one time	In-house conversion/ vendor updating; Enhanced Bibliofile for proc. centers
Media Flex, Inc. P.O. Box #1107 Champlain, NY 12919 (518)298-2970	IBM & compatibles	Mandarin on-line circulation & catalog system $2500; Multi-user option $3000 per site	Very flexible database. Spindle data conversion program; multi-lingual commands
Utlas Corp. 80 Bloor St. West Toronto, Ontario Canada M5S 2V1 (416)923-0890	IBM & compatibles	MSeries 10 license fees are: Circulation $3375; Catalog $2700 for multi-users, plus other costs for software database set-up and maintenance, per site	Online cataloging and retrospective conversion services
Winnebago Software 121 So. Marshall Caledonia, MN 55921 (507)724-5411	IBM & compatibles	Winnebago Circ. $995; Winnebago Cat. $995 (combined offer $1695 until 12/31/88)	Vendor conversion options

This is a representative list of vendors who exhibited at the 1988 conference of the American Library Association; other microcomputer programs used by school library media centers are also available. All prices quoted, current as of July 1988, are subject to change.

The items which follow are a broad checklist of the considerations in planning for any automated system. Knowledge of these issues should be expanded by reading the literature, examining different systems at conferences, or perhaps through purchasing demo disks, and finally, when the selection process has narrowed the choice, those systems should be reviewed in greater detail at a school site using the program.

1. Standards. There is only one standard for bibliographic records, the *Anglo-American Cataloguing Rules*, 2nd Edition (AACR2), which includes the format for MARC records. School library media centers were not early subscribers to cataloging standards, evidenced in the research of Rogers and Truett and attributed to school library media specialists' lack of training in cataloging, lack of support staff in the building, and/or lack of endorsement by state supervisors.[4] The development of online catalogs in school library media centers which might be interfaced in multilibrary networks focused new attention on the school library media specialists' lack of awareness of mainstream standards. The fact that record conversion to electronic format in the pioneer days of microcomputer OPAC development was largely accomplished by keying in all data from shelf-list cards at the local site did not contribute favorably to adherence to standards. My doctoral research, mentioned earlier, confirmed that the lack of awareness of cataloging standards which existed in the card catalog era had been continued into the microcomputer online age; by contrast, those schools belonging to bibliographic utilities and networks were influenced to conform to cataloging standards.

All of this has changed in 1988. The microcomputer stand-alone systems, as well as the minicomputer systems, provide for storage of the full MARC record although vendors' claims for data storage should be verified. Automated system vendors as well as specialized data conversion vendors offer varied retrospective conversion options. There are still a few microcomputer software systems on the market which do not conform to the mainstream standard for bibliographic records and these programs should not even be considered for purchase.

2. Networking. Multi-library networking offers to members various cataloging and interlibrary loan services as well as union catalog products that are online, on microfiche or in CD-ROM format. School library media centers participate in many state and regional networks but only those which are automated provide direction, and sometimes financial support, in the development of local cataloging and OPACS. Examples of these automated database networks are Access Pennsylvania's LE PAC, Wisconsin's WISCAT, Minnesota's TIES, and the Western Library Network's LASER CAT. Just as critical is local area networking, the cabling of terminals in an onsite multi-user system, which has just come of age. (Recent technology allows several different stations to access the database simultaneously.) This development permits processing in one location and public access from several terminals in another area. It is also possible (though still in the experimental stage) to customize network software to access from the same menu both a MARC record online catalog database and a non-Marc record database of perhaps a film collection.

3. Hardware—Micro or Mini. The debate is between a system with terminals linked to a remote bibliographic database or a microcomputer stand-alone system (IBM, or more recently, Macintosh). There is usually a correlation between large school districts and extensive computer systems because of the greater cost of a distributed bibliographic network, but sometimes there are joint school and public library automation projects which favor the selection of an online system by a smaller school. The smaller library usually chooses a microcomputer system because both the start-up and maintenance programs are less expensive. The greatest advantage of the online system is that it has the most current database, but the distinctions between the two types of systems are blurring as the technology provides for off-line, more frequently updated databases on compact disks which can be interfaced with different computer systems.

4. Cost. Cost includes software and peripherals such as a bar wand or scanner, as well as hardware, but even more significantly, the retrospective conversion of the library's shelflist to machine readable cataloging. Once the decision is made between minicomputer and microcom

TABLE 2

Microcomputer Integrated Systems

Vendor	Notes
CLSI, Inc. 320 Nevada Street Newtonville, MA 02160 (800)225-3076; (617)965-6310	Carmel Clay, Indiana. (No information available about total number of installations in schools.)
Dynix, Inc. 151 East 1700 South Provo, UT 84601 (801)375-2770	25 school district sites in a Dynix list of installations available by request; includes Provo Public Schools and Jefferson County (KY) Public Schools; others mostly in British Isles and Australia
INLEX, Inc. 1900 Garden Road P.O. Box 1349 Monterey, CA 93942 (800)553-1202	Response to telephone inquiry indicates about 5 school district installations.
NOTIS Systems, Inc. 1007 Church St., 2d fl. Evanston, IL 60201 (312)866-0150	Wichita (KS) Public Schools. Response to telephone inquiry indicates that they are in a few districts.
UTLAS (see Table 1)	Stand-alone microcomputer system as well as other configurations

All systems have modules for other functions, including circulation and the catalog. Online cataloging is directly available from a shared network base and from a bibliographic utility link. The minimum startup costs for a school system, quoted by most vendors, ranged from $50,000 to $60,000, but, depending on the number of services and terminals required, the cost could be much higher.

puter systems, there are further variations in the price of single- and multi-user networks, software programs, and retrospective conversion options. There are also vendor charges for yearly maintenance and support. The budget for automation should be based on planned obsolescence of hardware (perhaps 20% replacement cost per year over a period of five years) and software updates (change is constant as the vendor receives input from users and also tries to be competitive). An important aspect of the budget should be a one-time retrospective conversion of records, which may be transferred to a different system as needs change (this incurs far less expense than reentry of data). It should be remembered, however, that automation does not usually save money. The result of automation is an improvement in services. This improvement justifies any increase in costs.

5. Order of conversion. Many more circulation systems than public access catalogs have been sold, but this is changing. It was considered less costly and easier to begin automating by typing in a brief bibliographic record for a circulation system, than to develop full bibliographic records for a public access catalog. Because the program vendors, as well as companies dealing strictly with retrospective conversion, are providing more options, school library media centers are now just as likely to begin automating by developing a database of records which can be accessed for different functions in an integrated system. Automating circulation facilitates the handling and inventory of materials but also encourages use analysis for collection development. The automation of the catalog provides greater access to materials because of improved searching options and indexing. Circulation and catalog modules are the two major components of an integrated system but acquisitions, serials, and inventory modules may be added. Data is shared between modules where needed.

6. Retrospective conversion. The vendors can provide brief records for a circulation system or full MARC records for a catalog. Vendors can do all of the data entry from the library's shelflist or they can supply a software program which the school library media specialist uses to identify a title. The data entry disks are then forwarded to the vendor to be expanded into full MARC records. Alternatively, the school library media specialist can pull partial or full records into a circulation system or catalog by using a CD-ROM database of Library of Congress MARC records or a shared union catalog of MARC records, or they may use an online bibliographic utility. The cost of retrospective conversion will vary according to the method and how much data the vendor provides. Current records for new acquisitions may also be downloaded to the local database from a network terminal or compact disc, or they may be secured in the MicroLIF format provided on floppy disks by book suppliers (along with bar-coded books). The MicroLIF format was cooperatively developed by the microcomputer circulation system vendors and a number of major book suppliers including Baker & Taylor, Brodart, and Follett.

When considering options for retrospective conversions, it is wise to plan for archival copies of the library's full MARC records to be stored on magnetic tapes or disks. The companies which specialize in retrospective conversion will hold those archival copies in-house; the vendors of circulation and catalog software may deliver the converted records but once these are loaded into the system, it is possible that they will be altered and will no longer be complete MARC records. The rule is to keep a separate set of archival tapes or disks somewhere outside of the system.

7. Non-print bibliographic records. Because school library media center collections have more audiovisual materials than most other kinds of libraries, the lack of MARC records for these materials has been a particular problem. This will change as more schools participate in statewide

TABLE 3

Retrospection Conversion Services

Vendor	Services
Amigos Bibliographic Council, Inc. 11300 North Central Expressway, Suite 321 Dallas, TX 75243 (214)750-6130	Retrospective conversion on OCLC's MICROCON or on MicroSHARES for numeric searching.
Brodart Automation 500 Arch Street Williamsport, PA 17705 (800)233-8467	Vendor shelflist and tape conversions, MicroCheck, MITINET and the Interactive Access System for ongoing cataloging.
The Computer Co. 1905 Westmoreland St. Richmond, Va. 23230 (800)446-2612; (804)254-2357	Data integration, retrospective conversion online and with micros, magnetic tape upgrades, bar coding, microfiche and CD-ROM catalogs.
Automation Division Catalog Card Corp. P.O. Box 1276 Burnsville, MN 55337 (800)328-2923	Retrospective conversion to MARC records with Library of Congress or Sears headings, circulation records. Complete conversions from shelflist and new acquisitions.
Information Transform 502 Leonard St. Madison, WI 53711 (608)255-4800	MITINET software for retrospective conversions and ongoing cataloging
Marcive, Inc. P.O. Box 47508 San Antonio, TX 78265 (512)646-6161	Conversions from shelflist, written lists and Cataloging Input System for IBM, Apple Skip or PC Skip software. Transmission of records online by modem, or by diskette or magnetic tape. Marcive/PAC microcomputer catalog available.

Retrospective conversion may be handled directly by the vendor of the automation system or bibliographic records may be transferred from an in-house CD-ROM database of MARC records or online from a shared bibliographic network. Per title costs will vary from 15¢ to more than $1, depending on the vendor's price and options.

TABLE 4

Schools Automating Circulation/Catalog

District/School		Respondent	Circulation	Catalog	Future Task
Brookline (MA) Public Schools	(9)	C. Markuson	Winnebago Circ. in high school (HS)	Winnebago Cat. in HS	Complete auto. other schools/union catalog
Broward County (FL) Public Schools	(170)	J. Klasing	Book Trak in 48 schools	(Book Trak has category searching)	Complete auto. other schools/union catalog
Carmel Clay (IN) Public Schools	(9)	K. Niemeyer	CLSI in HS	CLSI in HS/Public Library; OCLC for cataloging	Complete auto. other schools/INTELNET for interlibrary loan
Concord (CA) Public Schools	(37)	R. Skapura	Circ Plus in two HS (one is the original test site for Circ Plus)	Card catalog	Complete development of Circ Plus
Glen Ellyn (IL) Public Schools	(5)	D. Adcock	Circ Plus in junior high school (JHS)	Card catalog	Circ Plus in 4 elem. schools
Greensboro (NC) Public Schools	(38)	J. Davie	Circ Plus in 10 secondary, 1 elementary	OCLC for cataloging and interlibrary loan	Consider Circ Plus for other schools; plan for Cat Plus
Henrico County (VA) Public Schools	(52)	E. Browning	Pueblo Library System in 7 HS (designed for Henrico)	Pueblo in HS/Public Library	Complete auto. other schools
Madison (WI) Public Schools	(32+)	C. Cain	Circ Plus in HS	Cat Plus in HS (was test site)	Circ Plus and Cat Plus in all HS/MS, then elem. schools
Provo (UT) Public Schools	(16)	K. Berner	Dynix 2 in HS, 2 in MS	Dynix 2 HS, 2 MS with Public Library; OCLC for cataloging	Extend Dynix to other schools, plan collection development
Robbinsdale (MN) Public Schools	(17)	B. Nemer	Winnebago Circ in 11 elementary schools	Bibliofile to get ready for conversion of catalogs in 6 HS	Complete auto. other schools/union catalog
Santa Fe (NM) Indian School	(1)	A. McGrattan	Card circulation	Intelligent Catalog for Indian collection	Complete conversion of collection; auto. circ.
Shoreham/Wading River (NY) Public Schools	(5)	J. Bennett	Mandarin in HS; Utlas MSeries 10 in MS; Book Trak in MS; Utlas MSeries 10 in elem. schools	Same as circulation (database developed on Utlas)	Develop multi-user network, interface HS catalog and non-MARC CD-ROM ERIC, Info Trac, etc.
Stamford (CT) Public Schools	(17)	E. Kogan	Circ Plus in elem. schools	CLSI terminal access to public lib. from HS, pilot site for Project Amoeba (CT interlibrary loan database on CD-ROM)	Complete plan for automating schools
Tower Hill School, Wilmington (DE)	(1)	N. Minnich	Circ Plus in Upper and Lower Schools	Intelligent Catalog in Upper School, Bibliofile for conversion	Auto. based collection development for curriculum
Wichita (KS) Public Schools	(105)	J. Meyers	Card circulation	Notis at 51 schools, links in HS to Wichita State Univ. Notis catalog	Put other elementary schools online, auto. circ.

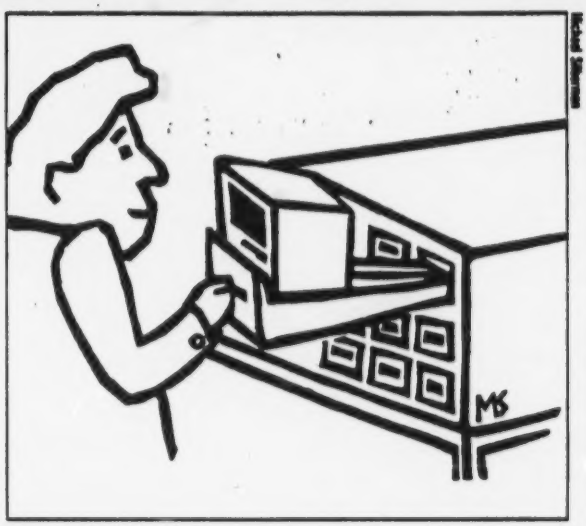
BEST COPY AVAILABLE

library systems which develop union catalogs. The records for audiovisual materials in these catalogs might be made available by an enterprising distributor. Several school districts in Maryland are sharing their audiovisual cataloging by sending floppy disks to their vendor, Library Corporation, Inc., who returns the combined cataloging to each site for downloading into the *Intelligent Catalog* system.[5]

8. Reputation of the vendor. There are continuous changes in the automation market and it is wise to select a system that has been on the market for a while. This ensures that there are a number of users and that the bugs in the program have been worked out. Some vendors have a nationwide, as well as international, network of users who may be contacted by beginning users. Most vendors distribute newsletters which also connect users. There should also be telephone support available from the vendor during the workday, via a toll-free number.

9. Integration of school library software with school management software. One of the newer developments in this area is the marketing of library management programs by some of the companies that offer school management software. This increases the likelihood that some school library media centers will be automated because school records are computerized (perhaps it will also work the other way). The two programs can be integrated to facilitate the exchange of student data or the collection of overdue fines, for example. It is also technically possible to interface two different hardware and software systems—a school management program from one company with a library management program from another company—if a link is programmed to enable the exchange of necessary data.

10. Subject Access. The real revolution in online catalogs must be in improved subject access for users; otherwise, the investment of resources in automation does little more than replicate the card catalog. Improved subject access means, to begin with, access to fields not conventionally indexed, such as call number, notes, and copyright as well as the author, title, and subject. Key word and Boolean searching options increase the retrieval of subject information. Online help menus, location maps, and audio tutors can guide the user from one step of the search to the next step.



Richard Sibbernsen

Some vendors are providing online indexes which link to the MARC record to create even greater access. Authority files for author's names and subject heading are important and have been standard in the big online systems for some time. Tables of contents and first pages of documents might also be linked to the main record. Enhancements to the record itself include local additions in the notes field such as curriculum units and grade and reading levels. Some vendors are providing or are planning to implement a number of these enhancements in microcomputer OPACS.

The Marketplace

Table 1 indicates microcomputer stand-alone systems which school library media centers are purchasing. Follett Library Software Company is the leader in this field, followed by Winnebago, and there are several new entries and one merger.

Table 2 lists four online systems which have also gained some of the school market; although, according to this author's survey, it is a small share (this information is comparable to a report in a recent article about the library automation market place).[6] More companies marketing retrospective conversion services are also appealing to the microcomputer market, as Table 3 shows.

Survey

Media specialists and directors were contacted by telephone or at the American Library Association Conference in New Orleans, LA in July 1988 and asked what their school district automation status was at the time. They were also requested to define their task for the next several years. The respondents are in school districts of varying sizes and represent different approaches to automation, from development of a microcomputer stand-alone system to a minicomputer shared network.

Some Final Suggestions

It is apparent that there are some universal suggestions which all school library media specialists wishing to automate circulation and/or the catalog may wish to consider: become informed about the market by reading and attending conferences; learn what is going on with automation at the state and regional level which may affect local decision-making; analyze the resources of the school district in terms of the budget, staff, expertise, and motivation necessary to implement an automated system; follow standards for retrospective conversion and new acquisitions of bibliographic records; and finally, form a committee in the school which involves all of the participants in planning for site automation. It is necessary to add that the technology is constantly changing and everyone must be aware of the inevitability that systems will become obsolete. On the other hand, this is an exciting time to automate because the technology, while costly, at last promises to deliver real improvements in the managing, indexing, and retrieval of library materials. □

References

1. Murphy, Catherine. *Microcomputer Stand-Alone Online Public Access Catalogs: Practices and Attitudes of School Library Media Specialists Toward Standardization.* Doctoral dissertation, Columbia University, 1987.
2. Seal, Alan, ed. *Introducing the Online Catalogue: Papers Based on Seminars Held in 1983.* Bath: University of Bath, 1984.
3. Costa, Betty and Marie Costa. "Microcomputer in Colorado-It's Elementary." *Wilson Library Bulletin* 58 (May 1981): 676-678+
4. Rogers, JoAnn V. "Mainstreaming Media Center Materials: Adopting AACR2." *School Library Journal* 27 (April 1981): 31. Truett, Carol. "Is Cataloging a Passé Skill in Today's Technological Society?" *Library Resources & Technical Services* 28 (July/September 1984): 268-275.
5. "Networking a CD-ROM system: Bibliofile in Maryland." *Library Journal* (February 15, 1987): 96.
6. Walton, Robert A. and Frank R. Bridge. "Automated System Marketplace 1987: Maturity and Competition." *Library Journal* 113 (April 1, 1988): 33-43.

CD-ROM: Information at Your Fingertips!

DONNA J. BAUMBACH

This article briefly describes CD-ROM technology and two searching techniques allowed by most CD-ROM databases—the browse search and the analytic or Boolean search. Possible impacts of this technology on the school library media center are discussed and a number of appropriate products currently available on CD-ROM are described. Advantages, disadvantages, and possible future developments of the technology are also discussed, and some ideas to help school library media specialists implement CD-ROM technology are suggested.

CD-ROM, which stands for *compact disc-read only memory*, may be a school library media specialist's dream come true! CD-ROM offers library media specialists access to a massive amount of information contained in a small space and easily and quickly retrieved. By changing the way in which information is stored and accessed, this new technology can help school library media specialists meet the many challenges presented in *Information Power: Guidelines for School Library Media Programs*.[1]

A close relative of the audio compact discs that have provided high quality music for the past few years, CD-ROM contains digital data that have been pressed onto a 4.72-inch optical disc. The disc is encased in plastic for protection and read by a low powered, narrowly focused laser beam. Because the disc is read by a laser beam, it is not vulnerable to surface wear and has a long shelf life.

A special CD-ROM player is required to read the CD-ROM discs. These players, which are either IBM or Macintosh/Apple compatible, must be connected to a computer and monitor. By using special search and retrieval software, the user can display information from the CD-ROM disc on the computer monitor. Because the disc is read-only, data cannot be added, changed, or erased after the disc is produced.

The primary advantage of CD-ROM technology is its large storage capacity. A single disc can hold over 250,000 pages of text, roughly 1,500 times the capacity of a floppy diskette. The disc can store other digital data as well—for example, 15,000 images, one hour of sound, or any combination of text, graphics, and sound. Another advantage is the quick access to any of the information on the disc.

Although CD-ROM technology is only a few years old, hundreds of applications are already available. The majority of the IBM-compatible programs are primarily text-based; however, the Macintosh applications are more oriented toward graphics. Few applications are currently available for the Apple II series of computers, but watch for new developments in that area.

SEARCHING CD-ROMs

Using a CD-ROM is much like using the school library media center. Students can browse, or they can look for something specific. And students soon discover that a well-designed search strategy is the key to finding information, whether it be on the shelves or on a CD-ROM.

Most CD-ROM databases allow the user to search in at least two ways—the browse search and the analytic or Boolean search. A browse search will allow the user to look through an alphabetical index of words or titles. A search conducted in this manner is relatively broad because the searcher cannot use a combination of words or techniques.

The analytic or Boolean search is more complex and allows the user to combine keywords to narrow the search. In these searches, three simple and familiar words (and, or, not) are used as logical connectors to define the relationship of the keywords in the articles. For example, someone who is searching for information about compact discs might enter the words COMPACT AND DISC. This search would probably result in fewer hits (citations) than would a search that specified each word individually, but the results of the "and" search would be more precise because the selected articles would contain

Donna J. Baumbach is Associate Professor of Education, University of Central Florida, and Director of the University Instructional Technology Resource Center.

61

Reprinted with permission of the American Library Association

both the word COMPACT and the word DISC. More sophisticated users will find that they can also specify the proximity and sequence of the words. In the compact disc example, this could eliminate any articles on DISC brakes in COMPACT cars.

Other advanced search techniques include the use of truncation and wildcards. Truncation allows the user to locate all occurrences of a root word with various endings. A search for the word COMPUTER would retrieve far fewer hits than a search for the truncated word COMPUT*, which would also retrieve COMPUTE, COMPUTED, COMPUTER, COMPUTERS, and COMPUTING. Wildcards allow for spelling variations within a word. For example, the wildcard in the word WOM#N would retrieve the words WOMAN and/or WOMEN.

APPLICATIONS FOR SCHOOL LIBRARY MEDIA CENTERS

While virtually any type of information can be stored on CD-ROM, the major applications for the media center fall into the categories listed below.

Online Union Catalog. Traditionally, information about the holdings of the school library media center was retrieved through the center's card catalog. Technology and standardization of records (MARC format) have allowed the creation of electronic databases that can be shared locally, statewide, regionally, or nationally. Until the advent of CD-ROM, huge databases had to be stored in computers with large amounts of memory and accessed through remote computer terminals. CD-ROM now makes it possible to store, search, and retrieve information from the catalogs of an entire school district, region, or state from a database located in the school library media center. The database is updated by replacing the CD-ROM disc, an inexpensive process when large quantities of the disc are produced. This use of CD-ROM promotes networking and resource sharing, thus increasing students' access to information. Examples of online catalogs using CD-ROMs described in the library literature are *LaserCat* and *Access Pennsylvania*.

Reference Sources. Because CD-ROM is read-only, it is most appropriate for storing large amounts of information that do not change rapidly. This makes it an ideal medium for many of the typical reference works that school library media centers use. In fact, many of the reference tools that writers use regularly are on one CD-ROM, the *Microsoft Bookshelf*. One of the earliest applications of CD-ROM, *Bookshelf* is a memory resident program, meaning that after it is loaded into memory, another application, such as a word processing program, can be used concurrently. *Microsoft Bookshelf* contains a whole set of ready reference materials, such as the *American Heritage Dictionary, The 1987 World Almanac, U.S. Zip Code Directory, Roget's Thesaurus, Bartlett's Familiar Quotations*, and *The Chicago Manual of Style*. It also includes a variety of business forms, letters, spelling verifiers, grammar checkers, and more—all at a cost less than the total of the print versions.

Another popular application of CD-ROM for the school library media center is *Grolier's New Electronic Encyclopedia*. Already in its second version, this application contains the entire twenty-volume set of the encyclopedia, and the contents take up less than one-third of the capacity of the disc. Again the price of the encyclopedia on CD-ROM is less than the print version. Students can browse the electronic encyclopedia by viewing the list of article titles or words, or they can conduct a search using several keywords. The *New Grolier's* is one of the first MS-DOS applications to take advantage of hypertext—the ability to jump from article to article with a keystroke. For example, if a student were reading about France and saw a reference to the Norman Invasion, he or she could, simply by pushing a single key, move immediately to the related article. The *Electronic Encyclopedia* also allows students to use electronic bookmarks so they can return to an article or paragraph. In addition it has an electronic notepad feature that allows copying paragraphs or making notes for future use.

CD-ROM now makes it possible to store, search, and retrieve information from the catalogs of an entire school district, region, or state from a database located in the school library media center.

The *Facts on File News Digest* on CD-ROM is a comprehensive source of abstracts of leading news stories from national and international sources from 1980 to 1988, including nearly 500,000 entries in the cumulative index and over 500 maps. Students can browse the index or search by word, date, place, name, or any combination of these.

Most school library media specialists have had the thrill of seeing the *Oxford English Dictionary* in its twelve volumes, but few have the resources to purchase it for their school library media centers. The CD-ROM version is less expensive, far less cumbersome, and it is easy to use and retrieve information using simple search strategies. Its scope includes all words used in English since 1150 A.D. For each word, it provides current or most common spellings, pronunciation, parts of speech, earlier spellings, etymology, and meanings. It is an excellent source of word derivations and illustrative quotations.

The *McGraw-Hill CD-ROM Science and Technical Reference Set* is the CD-ROM version of the *McGraw-Hill Concise Encyclopedia* and the *McGraw-Hill Dictionary of Scientific and Technical Terms*. The encyclopedia on disc contains 7,300 articles covering all aspects of science and technology from astronomy to zoology.

Of special interest to secondary schools is *Peterson's College Database*, a full-text database containing over 3,200 profiles of accredited, degree-granting colleges in the United States and Canada. Each profile includes information about students, admission requirements, costs, financial aid, majors, and special programs.

Even atlases are available on CD-ROM. The *Electronic Map Cabinet* provides detailed information on the United States with special high-density information on over 300 cities. Included are political boundaries as well as water boundaries, national parks, monuments, and reservations. The user can also select options for viewing different types of highways, roads, railroads, power lines, and airports. The program allows the user to configure maps to any scale and print them in color on a printer.

Government agencies such as the Department of Agricul-

Finding information in the indexes is faster and more precise when using CD-ROM, and many CD-ROM versions contain features the printed versions do not . . . .

ture, the U.S. Bureau of the Census, and the Central Intelligence Agency are experimenting with CD-ROM. The *GPO Monthly Catalog on CD-ROM*, the most comprehensive source of information on federal-government publications, is now available as well.

Indexes. One of the most popular uses of the CD-ROM for school library media centers has been indexing. Such familiar print resources as *Readers' Guide*, *Library Literature*, *ERIC*, and *Books in Print* take on a whole new dimension when accessed from a CD-ROM. Finding information in the indexes is faster and more precise when using CD-ROM, and many CD-ROM versions contain features the printed versions do not, such as word, title, and subject indexes. Some applications even provide the access through a modem to search an online database when more current information is needed.

Most of the materials indexed, such as the articles identified by using *Social Science Index*, ERIC's *CIJE*, or InfoTrac's *Magazine Index Plus* are accessed in the traditional way; students must find the periodical and locate the article from the information they have printed as a result of their search. Other CD-ROM indexes such as InfoTrac's *Text on Microfilm* and *NewsBank* provide access to the text of items through microfiche. Although some CD-ROMs provide abstracts, CD-ROMs with full-text capabilities—the ability to access the entire article from the CD-ROM—are not generally available yet because of the complexities of copyright law.

Multimedia Materials. Compact discs can store anything that can be digitally encoded—text, audio, video, animation, and graphics. This makes the CD-ROM a likely candidate for multimedia presentations, and the fact that the disc can be accessed at any point provides the flexibility for branching and interactivity. While the potential of the CD-ROM for multimedia presentation of information, including instructional materials, is just developing, the early products are exciting, and the prototypes are promising.

Facts On File has produced a CD-ROM prototype of its *Visual Dictionary*. A student can select a term that lends itself to visualization—an automobile or a bicycle, for example. The student clicks on a part and it is labeled and pronounced. The student can also choose to have the labels and audio in English, Spanish, French or any combination of these.

A prototype version of *Grolier's Electronic Encyclopedia* for the Macintosh allows students to search for a word or topic and then see and hear the digital equivalent of a slide/tape presentation. Students can control the presentation, stopping to review a segment, branching to a related article, hearing and seeing the information from a different point of view, or experiencing related sights, sounds, music, and ideas.

Compton's MultiMedia Encyclopedia is one of the first multimedia reference works and demonstrates the potential of CD-ROM and its unique attributes. This CD-ROM provides access to information in a variety of ways in addition to the browse or Boolean searches. Students can click the mouse on an animated globe and go to a more detailed map of the area. They can view a timeline to access information about a specific event or time period. Students who are visually oriented can begin a search by browsing through a file of pictures. A click on the mouse takes the student directly to a related article. The student can also search with queries in his or her own words, even though a search term may be misspelled, inaccurate, or incomplete. The disc contains the encyclopedia text, over 12,000 full color photographs and illustrations, and some special recordings such as examples of various composers' music or of speeches delivered by Martin Luther King or John F. Kennedy. The program has a built-in notebook, word processor, and access to *Webster's Intermediate Dictionary*, where terms are pronounced audibly, as well as defined.

Webster's Ninth New Collegiate Dictionary on CD-ROM contains all the text, graphics, and illustrations of the print publication. In addition all the main entry words have been digitally recorded so that the user can hear them pronounced accurately.

A somewhat different multimedia application is *The Manhole* CD-ROM program for Macintosh computers. *The Manhole* is a highly interactive wordless picture adventure story with music which was created with HyperCard™, a hypermedia software program for the Macintosh computer. Many HyperCard applications are using CD-ROM as the storage/delivery system because of the huge amount of storage space required by digitized graphics and sound.

Broderbund's *Electronic Whole Earth Catalog* offers another look at the possibilities of multimedia on CD-ROM. *Whole Earth* reviews over 2,500 items arranged in twelve major areas such as craft, communications, media, learning, and community. A search for information on music will provide sources of information, reviews, a graphic image of the material, sample pages from the work, and samples of the sound. By selecting "print order form" from a pull-down menu, the user can print the order form and a personalized letter requesting information, together with a sample screen from the *Whole Earth Catalog*. This CD-ROM resource also demonstrates hypertext capabilities by allowing the user to explore and move through the disc with a click of the mouse.

Combinations of audio CDs and CD-ROMs are also beginning to appear. Imagine a guided tour through Mozart's *Magic Flute*. Now available, it includes a high quality recording of the work as well as German or English translations of the lyrics, notes on the stage action, expert commentary, and a glossary. Upcoming works in this series will include graphics and a MIDI (Musical Instrument Digital Interface) to synthesizers. Look for more application like this one in the near future.

Public Domain Software Programs. Many shareware CD-ROMs have been produced, each of which contain thousands of public domain and shareware programs for the computer user. With discs such as *PC-SIG*, *BMUG*, *Facts On File Public Domain Software on CD-ROM* and *Club Mac*, it is possible for users to locate entertainment, application, graphic, utility, and educational programs and transfer them to their own computer disks. In the case of public domain programs, they are entirely free of charge to the user. Shareware requires that a fee be paid to the author or producer if the program is used. These CD-ROMs, packed with free and inexpensive programs, are available for Macintosh, IBM-compatibles, and Apple II computers.

School library media specialists should also be aware of the use of CD-ROMs to hold massive amounts of computer-

Familiar print versions of many professional tools are now available on CD-ROM with built-in features that were previously impossible.

assisted instruction, tutorials, structured drill and practice programs, and tests. Even though these systems are seldom located in the school library media center, an awareness of them and their impact on the curriculum is critical for school library media specialists.

Professional Tools. Familiar print versions of many professional tools are now available on CD-ROM with built-in features that were previously impossible. *Books in Print* in its printed format was intended to be used to find ordering information for materials currently available but did not offer an evaluative information. However, its CD-ROM equivalent, Bowker's *Books in Print Plus (BIP+)*, offers some reviews as well as the ability to place an order for any title with a few keystrokes by interfacing with software programs that can be provided by jobbers. *Books in Print with Book Reviews Plus* includes reviews from major journals. Other professional tools available on CD-ROM include *Bibliofile*, *Ulrich's Plus*, the *EBSCO Serials Directory*, *Any-Book*, and *AV Online*.

There are professional tools for teachers and administrators on CD-ROM also. *The 1st National Item Bank* allows teachers to build and produce curriculum-based tests that measure the basic skills. The database contains over 80,000 validated test items linked to over 10,000 instructional objectives. *Science Helper* provides complete lesson plans that can be accessed by grade level, topic, or specific objectives. And, yes, there is a CD-ROM on CD-ROM. *The CD-ROM Source Disc* contains a database of commercially available CD-ROM titles, demonstrations of many of the titles, and ordering information. It also contains the full text of *The New Papyrus* and other information about CD-ROMs.

POTENTIAL IMPACT OF CD-ROM TECHNOLOGY ON THE SCHOOL LIBRARY MEDIA CENTER

CD-ROM is a relatively new technology for the school library media center. Only time and well-designed research studies will give us adequate information about the effects of CD-ROM on the school library media center, the library media program, and the student. Organization and retrieval of information in this technological age has brought the need for more research studies and data to improve products, services, and performance for users.[1] The introduction of any innovation or technology into the school library media center can be accompanied by the assumption that it will produce a variety of positive and negative effects. Change is being experienced in the following areas:

The Information Skills Curriculum. The ability to conduct a successful search is a skill that is becoming essential in the school library media center as well as in the public and academic library. It is becoming an important part of many professions, too, since many businesses access databases on a daily basis. The foundation for teaching CD-ROM search skills already exists in the information skills curriculum. We teach students to identify titles, authors, and subjects. We help them to identify keywords and synonyms, and we assist them in evaluating the search. These general principles for searching are also important in CD-ROM searches. Students need assistance in conducting searches that are efficient and effective.

In addition to basic principles, students also need an understanding of different databases, the hardware and software being used, and protocols and commands specific to each database. These specific skills will vary with the databases available.

Students must also have an understanding of the subject being searched. This provides an excellent opportunity for integrating CD-ROM search skills with classroom instruction. Students can see the value of CD-ROM and internalize the skills when they are used to meet a specific need. While these skills can be implemented and reinforced at various grade levels and in many subject areas, a review and revision of the information skills curriculum is in order as a school moves into CD-ROM-based reference and indexing materials.

Students can use CD-ROM successfully with little instruction.[4] Flip charts and posters near the workstation can provide information to assist them with technical details. Many vendors provide such materials, but they need to be tailored to the individual situation and supplemented with locally produced materials. A small cadre of well-trained students who can provide assistance to novice student users has been shown to be effective.[5]

While students do not show a clear preference for either the analytical or the browse search,[6] instruction for students in formulating and executing search strategies provides greater success[7] and more confident users.[8] With students having access to more and more information, students need instruction in finding pertinent information, filtering it, and using it appropriately. Analysis, synthesis, and assimilation of the information are higher order thinking skills that must be addressed by the information skills curriculum.

Utilization of School Library Media Center Materials. Schools with CD-ROM-based indexes such as *Readers' Guide* are reporting increased circulation of materials indexed and increased demand for interlibrary loan.[9] In addition, several have reported increased use of print indexes, indicating not only that searching CD-ROM databases has provided students with a better understanding of indexes, but also that students may not want to wait in line to use the CD-ROM workstation.[10]

Increased Demand for Equipment. A school using CD-ROM will quickly discover that a single workstation is inadequate. More students and faculty will want access to a single CD-ROM, and with the addition of more applications, more workstations may become necessary. Coping with increased demand for use of CD-ROM workstations is a problem that becomes compounded when this resource is promoted to ensure that all students are aware of it.[11] Budgeting for this equip-

The introduction of any innovation or technology into the school library media center can be accompanied by the assumption that it will produce a variety of positive and negative effects.

School library media center staff need time and practice to learn each application thoroughly enough to assist users.

ment is essential in both long- and short-range planning. This can be difficult in light of rapidly dropping prices, almost weekly announcements of new products, and technological developments that make today's state-of-the-art workstation inadequate tomorrow. Producers appear to be sensitive to this, however. Recently, several companies announced upcoming changes to their products—along with requirements and information necessary to upgrade equipment—over a year in advance of the event.

Staff and Faculty Training. Provisions must be made for training library media center staff so that they feel comfortable with the equipment and knowledgeable in its use. School library media center staff need time and practice to learn each application thoroughly enough to assist users. In addition, in-service training for faculty is needed to ensure that they will use the new technology, incorporate it into their curricula, and encourage their students to use it.

Controlled Costs. While online services such as Dialog, BRS, or CompuServe may provide information to meet students' needs, costs cannot be predicted or controlled without limiting student access. CD-ROM applications can be searched without the time or cost limitations of online services. Phone lines, modems, passwords, and accounts are usually not necessary with CD-ROMs (unless online access is included in the subscription cost, as is the case with Wilson Discs). However, updating of information may not be as frequent with CD-ROM. Fortunately, if a school decides to offer both CD-ROM and online searches, the same search techniques and skills can be used for both technologies. The ability to determine an effective search strategy while working offline with CD-ROM databases saves money when that same strategy is used in online searches.

Role of the Library Media Specialist. As CD-ROM users increase their abilities to retrieve information independently, the library media specialist can assume more responsibility for enrichment activities, consulting with teachers and students, and integrating information skills into the curriculum. The presence of the CD-ROM in the library media center provides a positive perception of the school library media specialist as an innovator, as a leader in the area of new and emerging technologies, and as an educator interested in meeting the needs of the school's students and faculty.[12]

ADVANTAGES OF THE CD-ROM FOR SCHOOL LIBRARY MEDIA CENTERS

The role of CD-ROM in the school library media center offers several important benefits for users. These include:

Speed. Finding information with CD-ROM databases is faster and more efficient than manual searching. If it takes less time to find information, more time is available for analyzing and assimilating that information.

Feedback. Users can tell immediately whether or not they have sufficiently defined their search strategies. They can use this information to refine the search until an adequate quality and quantity of information is located.

Motivation. Students enjoy working with CD-ROM materials and recognize that technology is helping them to accomplish their tasks more efficiently and effectively—exactly what technology ought to do!

Confidence Building. There is much satisfaction in accomplishing a successful search, and doing so builds confidence in the student's own ability to find and use information. Since the discs are "read-only," users feel more confident in knowing they cannot damage the information in any way.

Increased Language and Problem Solving Skills. Students who use CD-ROM quickly discover that proper spelling, grammar, and typing are important keys to successful searches. Following directions, identifying problems and possible solutions, classifying information, editing, refining, and modifying are skills that lead to successful searches.

Increased Opportunities to Explore Information. Students using CD-ROM are more likely to explore cross references and to browse through related titles. Word and title indexes allow students to browse through massive amounts of information, and the hypertext capabilities of many programs—the ability to go directly to a cross reference with a keystroke or click of the mouse—allow a sort of "stream of consciousness" exploration.

Ease of Compiling Bibliographies. Users can use information retrieved by their searches to build bibliographies. Media specialists can easily create bibliographies for teachers on a specific topic or areas of interest. Students can save information to disk for later use as references for a research paper, editing their work with a word processor.

DISADVANTAGES OF THE CD-ROM FOR SCHOOL LIBRARY MEDIA CENTERS

Cost. The price of a CD-ROM can range from about $20 for a single multimedia story on disc to thousands of dollars for specialized databases that are updated frequently and provide online capabilities at no extra cost. In addition to the cost of the disc, library media centers must provide a computer, monitor, CD-ROM drive, printer, and paper. In the case of CD-ROMs, which also provide access to an online database, a dedicated phone is required.

Lack of Access and Availability. While several different students can use various volumes of the printed encyclopedia at any one time, only one student at a time can access the CD-ROM version. Although many applications can be used on one workstation, the technical knowledge needed to install and maintain the programs as well as the difficulty resulting from the need to handle CD-ROM discs make this approach unpopular. The popularity of CD-ROMs may require multiple dedicated workstations to allow students adequate access to information.

Lack of Standardization in Search Protocols and Screen Design. The commands and symbols used to conduct a search

The popularity of CD-ROMs may require multiple dedicated workstations to allow students adequate access to information.

vary widely from program to program. Users will be able to memorize only those they use the most and may be frustrated by the lack of uniformity in commands and function keys when moving from database to database. While many programs have "help screens" available, the method of getting help is not uniform from program to program.

Lack of Documents or Delay of Documents. Students may find that items identified in the search are not available in the library media center and/or will be delayed by interlibrary loan. Media specialists may have to increase the number of periodicals available or develop new, faster interlibrary loan procedures such as using facsimile machines (FAX) in order to keep up with the demands of students.

Lack of Information, Scope, or Coverage. While CD-ROM technology is designed to increase the amount of information available, the database is only as good as the information it contains. Most databases provide indexing from the 1970s forward, limiting their use for historical information. Many databases are quite narrow and specific in scope, hindering the students who may need information that crosses the lines of several disciplines. In addition, the number of databases needed to cover the entire school curriculum may prove too costly to be obtained on CD-ROM.

Lack of Electronic Reading Skills. The majority of CD-ROM material is text-based, and students who have difficulty reading print material will also have difficulty reading material from the computer monitor. In addition, we read information from the computer at only about 75 percent of the speed we can read printed information.[13] And because much of the search software for CD-ROMs takes searchers to exact points where search words occur in an article, information is often retrieved that is out of context.[14] We have a great deal to learn about implementing electronic technologies.

FUTURE DEVELOPMENTS AND RELATED TECHNOLOGIES

Like many areas of electronics and computing, the CD-ROM field is rapidly developing and changing. Many of the considerations discussed as "disadvantages" in this article will be resolved in time. The costs of hardware and software are continuing to drop. The technology is becoming far more prevalent in the school library media center. Daisy-chaining, or attaching more than one CD-ROM drive to a single computer, has allowed a single workstation to access a number of different applications without users' handling discs. Single drives that can accommodate multiple discs have been introduced for audio CDs, and a similar drive might be imminent for CD-ROMs. There is also talk of introducing a "jukebox" type drive with a robotic arm that would select the appropriate disc and place it in the drive. At the time this is written, neither of these drives is available for the school library media center, but either or both soon may be commonplace. Such is the rate at which this technology is developing!

CD-ROM vendors and computer companies are experimenting with access to CD-ROM by multiple users through networks. The network environment currently makes access so slow that it becomes frustrating to users, but the possibilities look most promising.

Vendors are enhancing CD-ROM products to make them better and easier for users. More systems will provide access to online services for updating research results. Search software is becoming more sophisticated and easier to use. Publishers are also interested in creating a disc that can be used with a variety of operating systems (Apple-DOS, MS-DOS, etc.), and standards and technology have been developed to make this possible.

Another new development that will interest school library media specialists is the potential to use expert systems capabilities to allow the computer to interpret the meaning of a student's search. For example, a student could type in the query, "Where do pengwins live?" and the search software would automatically eliminate irrelevant words and match "pengwins" to its closest spelling, "penguins," to retrieve relevant articles.

Watch for CD-ROMs to expand into the home market as CD-ROM-based games and entertainment systems become popular. Several companies are ready to introduce these new, low-priced systems.[15]

As the CD-ROM has evolved from its relative, the audio CD, so there are other members of the optical storage family. Compact disc interactive and digital video interactive may be considered cousins, and, if so, the father of the family must be the larger format videodisc (see figure 1). These products, and other relatives still in development, are likely to have an impact on the school library media center as well. It may soon be commonplace for students to be able to read about an item of interest, see a drawing of it on their computer screens, hear it in stereo, and see it in full motion video.

CDI (compact disc interactive): An optical format that provides for the integration of a large number of media on a 4.72-inch disc, including digital or analog audio, digital data, still graphics, and digital video.

DVI (digital video interactive): An optical format that uses a special compression/decompression technique to store over an hour of full-motion digital video and audio on a 4.72-inch disc.

Videodisc: An optical format used primarily for storing analog video. The discs are 8 to 12 inches in diameter, contain 2 audio channels, and provide interactive features such as slow motion, reverse, and still-framing.

Figure 1.

Users who have appreciated the capacity of the CD-ROM but have been dissatisfied with its inability to save information may be investing in WORM drives (write once-read many) that allow them to save information. With a WORM disc, you create your own CD-ROM, adding data periodically until it is full. The NeXT computer already offers an erasable optical disc that holds 656 megabytes of data. Futurists tell us that perhaps soon a single computer chip will be able to hold many times the capacity of the CD-ROM disc.

GETTING STARTED WITH CD-ROM

Much is being written in the professional literature about CD-ROM and its use in the school library media center. Some school districts and universities have established CD-ROM preview centers so that school library media specialists can "test-drive" CD-ROM applications before they buy them.

If you do not have a CD-ROM workstation in your school library media center, there can be one in your immediate fu-

CD-ROMs can improve access to information, maximize utilization of library media center materials, and provide appropriate technology for instruction and information management.

ture! Here are some suggestions to help keep you abreast of this new technology.

Read the professional literature. Attend professional meetings and workshops. Talk to library media specialists who have CD-ROMs in their library media centers. Visit library media centers with CD-ROM workstations and take your principal and some members of your library media center advisory committee with you. Talk with students who have used CD-ROMs. Provide for a demonstration of CD-ROM technology at an upcoming open house or PTA meeting. Enlist the support of your colleagues and your community.

With this base of knowledge and support, develop an action plan. In your next budget proposal, include a CD-ROM workstation to support one or more of your media program's objectives. Remember that CD-ROMs can improve access to information, maximize utilization of library media center materials, and provide appropriate technology for instruction and information management. Be sure your budgeting includes hardware, software, and related peripherals. You will probably want to begin with one workstation for every 1,000 students and work toward one for every 500 students. You will need additional workstations and/or CD-ROM drives for every application you add.

For an MS-DOS workstation, allocate funds for a CD-ROM drive with a controller card and an IBM PC, XT, AT or compatible with at least 640K of RAM. A hard disc drive, color monitor, graphics card, and printer are highly recommended for many applications. You will also need an inexpensive program called MS-DOS CD-ROM Extensions for almost all applications. This is a program that tells your computer you have a CD-ROM drive attached and how to access it. If you are thinking of a Macintosh workstation, a Mac SE with a hard disk drive and an Apple CD-ROM drive are required, and a printer is recommended. CD-ROM discs and software can range from $20 to several thousands of dollars, so you will need to do some research to determine which applications best fit your needs.

You will need to think about providing more periodicals each year if you are using CD-ROM-based indexes. Include microform readers and a reader/printer if fiche are included with your index subscriptions or if you purchase back issues of periodicals on microform.

Begin early to plan workshops for faculty and library media staff as well as implementation and training strategies for students. Work with appropriate faculty to find ways to integrate CD-ROM resources into the writing, research, social science, and science curricula. Look for menu programs that will allow you to install multiple applications on one workstation and design help cards for use near the workstation. Discuss utilization and placement of the workstation(s) with your advisory committee.

Plan to add workstations, too, because the number of applications available will increase dramatically in the next few years. (Even though technology may well have advanced to allow multiple applications on a multi-user CD-ROM-based network, you will have allocated the funds for expansion of CD-ROM services.)

Introduce your students and faculty to the power of CD-ROM. They will be convinced that it is the best thing to happen to the school library media centers since electricity!

REFERENCES

1. American Association of School Librarians and Association for Educational Communications and Technology, *Information Power: Guidelines for School Library Media Programs* (Chicago: American Library Assn., 1988).
2. Linda Helgerson, "Individualized Education in the 1990s with CD-ROM," *CD-ROM EndUser* 1:6-9 (May 1989).
3. Raya Fidel, "Organizing, Indexing, and Retrieving Information," *School Library Media Quarterly* 17:206-09 (Summer 1989).
4. Diane Barlow and others, "CD-ROM in a High School Library Media Center: A Research Project," *School Library Journal* 34:66-72 (Nov. 1987).
5. Ibid., p.70.
6. Ibid., p.72.
7. Gary Marchionini, "Information-Seeking Strategies of Novices Using a Full-Text Electronic Encyclopedia," *Journal of the American Society of Information Science* 40:54-66 (Jan. 1989).
8. Peter Liebscher and Gary Marchionini, "Browse and Analytical Search Strategies in a Full-Text CD-ROM Encyclopedia," *School Library Media Quarterly* 16:223-33 (Summer 1988).
9. David C. Taylor, "Reference ROMs: Six Implications for Libraries Building CD-ROM Database Services," *American Libraries* 20:452 (May 1989).
10. Barlow, "CD-ROM in a High School," p.67.
11. Taylor, "Reference ROMs," p.454.
12. Doris Epler, "Networking in Pennsylvania: Technology and the School Library Media Center," *Library Trends* 37:43-55 (Summer 1988).
13. J. Gould and N. Grischkowsky, "Doing the Same Work with Hard Copy and with Cathode Ray Tube (CRT) Computer Terminals," *Human Factors* 26:323-37 (1984).
14. Barlow, "CD-ROM in a High School," p.71.
15. Linda Helgerson, "Electronic Games Machines Using CD-ROM Programs Are Here," CD-ROM EndUser 1:6 (June 1989).

CD-ROM RESOURCES AND DISTRIBUTORS

Access Pennsylvania. Pennsylvania State Library, 333 Market Street, Harrisburg, PA 17126-0333; (717) 787-6704

Any-Book. Library Corporation, P.O. Box 40035, Washington, D.C. 20016; (304) 725-7220

AV Online. SilverPlatter Information, Inc., 37 Walnut Street, Wellesley Hills, MA 02181; (617) 239-0306

Bibliofile. Library Corporation, P.O. Box 40035, Washington, D.C. 20016; (304) 725-7220

BMUG. BMUG Inc., Suite 62, 1442 A Walnut Street, Berkeley, CA 94709; (415) 549-2684

Books In Print Plus and Books In Print with Book Reviews Plus. Bowker Electronic Publishing, 245 West 17th Street, New York, NY 10011; (212) 337-6990

CD-ROM Source Disc. Diversified Data Resources, 6609 Rosecrift Place, Falls Church, VA 22043-1828; (703) 237-0682

CIJE/ERIC. SilverPlatter Information, Inc., 37 Walnut Street, Wellesley Hills, MA 02181; (617) 239-0306

CIJE/ERIC. OCLC, 6565 Frantz Road, Dublin, OH 43017; (614) 764-6006

CIJE/ERIC. Dialog Information Services, 3460 Hillview Avenue, Palo Alto, CA 94304-1321; (415) 858-4088

Club Mac. Quantum Access Inc., 1700 West Loop South, Suite 1460, Houston, TX 77027; (713) 622-3211

Compton's MultiMedia Encyclopedia. Encyclopaedia Britannica, Inc., Public Affairs Division, 310 Michigan Avenue, Chicago, IL 60604; (312) 347-7155

EBSCO Serials Directory. EBSCO Electronic Information, 23717 Hawthorne Boulevard, Suite 301, Torrance, CA 90505; (213) 530-7353

Electronic Map Cabinet. Highlighted Data, 6628 Midhill Place, Falls Church, VA 22043; (703) 241-1180

Electronic Whole Earth Catalog. Broderbund Software, 17 Paul Drive, San Rafael, CA 94903; (415) 492-3500

Facts On File News Digest, Facts On File Public Domain Software on CD-ROM, and Facts On File Visual Dictionary. Facts On File, Inc., 460 Park Avenue South, New York, NY 10016; (212) 683-2244

1st National Item Bank: Test Development System. Tescor, Inc., 461 Carlisle Drive, Herndon, VA 22070; (703) 435-9501

GPO Monthly Catalog. SilverPlatter Information, Inc., 37 Walnut Street, Wellesley Hills, MA 02181; (617) 239-0306

GPO Monthly Catalog. OCLC, 6565 Frantz Road, Dublin, OH 43017, (614) 764-6006

Grolier's New Electronic Encyclopedia. Grolier Electronic Publishing, Inc., Sherman Turnpike, Danbury, CT 06816; (203) 797-3365

LaserCat. Western Library Network, Washington State Library, Mail Stop AJ-11W, Olympia, WA 98504-0111; (206) 459-6545

Library Literature. H.W. Wilson Company, 950 University Avenue, Bronx, NY 10452; (212) 588-8400

Magazine Article Summaries. EBSCO Electronic Information, 23717 Hawthorne Boulevard, Suite 301, Torrance, CA 90505; (213) 530-7353

McGraw-Hill Science and Technical Reference Set. McGraw-Hill Book Company, Professional and Reference Division, 11 West 19th Street, 4th Floor, New York, NY 10011; (212) 337-5906

Magazine Index Plus. Information Access Company, 364 Lakeside Drive, Foster City, CA 94404; (415) 378-5000

The Magic Flute. Warner's New Media, 3500 W. Olive Avenue, Suite 1050, Burbank, CA 91505; (818) 955-9999

The Manhole. Activision, P.O. Box 3048, Menlo Park, CA 94024-3048; (415) 329-7699

Microsoft Bookshelf. Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717; (206) 882-8080

NewsBank Electronic Index. NewsBank, Inc., 58 Pine Street, New Canaan, CT 06840; (800) 223-4739

Oxford English Dictionary. Oxford University Press, Walton Street, Oxford X26DB England; 0865-56767

Peterson's College Database. SilverPlatter Information, Inc., 37 Walnut Street, Wellesley Hills, MA 02181; (617) 239-0306

PC-SIG. PC-SIG, 1030 - D East Duane Avenue, Suite C, Sunnyvale, CA 94086; (408) 730-9616

Readers' Guide and Readers' Guide Abstracts. H.W. Wilson Company, 950 University Avenue, Bronx, NY 10452; (212) 588-8400

Science Helper. PC-SIG, 1030 - D East Duane Avenue, Suite C, Sunnyvale, CA 94086; (408) 730-9616

Social Science Index. H.W. Wilson Company, 950 University Avenue, Bronx, NY 10452; (212) 588-8400

Text on Microfilm. Information Access Company, 364 Lakeside Drive, Foster City, CA 94404; (415) 378-5000

Ulrich's Plus. Bowker Electronic Publishing, 245 West 17th Street, New York, NY 10011; (212) 337-6990

Webster's Ninth New Collegiate Dictionary on CD-ROM. Highlighted Data, 6628 Midhill Place, Falls Church, VA 22043; (703) 241-1180

WANTED:
PROBLEM SOLVER

Censorship, latch-key children, pay-equity, preservation, literacy, access to information, confidentiality of patron records, mentoring...How do *you* face today's library issues? The American Library Association (ALA) can help. ALA's business is finding solutions. Join now.

You will be part of a network of 49,000+ dedicated library professionals in the oldest and largest library association in the world. Our 26 divisions and round tables offer you multiple opportunities for involvement and professional growth.

You'll receive *American Libraries*, with over 100 monthly job listings, discounts on publications and graphics, reduced registration rates at ALA conferences, voting and committee privileges, and eligibility for ALA's insurance and credit card programs. ALA dues are very affordable—$38 for first-time members, renewing members $75, students $19, non-salaried or retired librarians $26, trustees and associates $34.

Yes, I'll join!

☐ Enclosed is my check for $_____

☐ Charge my dues of $____ to my ☐ VISA

☐ MasterCard ☐ American Express

_____

card number exp. date

_____

signature

Information on ALA's divisions and round tables and how to get the most from your membership will be sent with your membership card.

Send your completed application to:
ALA Membership Services
American Library Association
50 East Huron Street
Chicago, IL 60611

_____

membership category

_____

name

_____

home address

_____

city state ZIP

_____

daytime phone

Send mail to ☐ home ☐ work.

A SAMPLE OUTLINE FOR A LIBRARY MEDIA PROGRAM LONG-RANGE PLAN

NOTE: The Wisconsin Department of Public Instruction does not require that a standard form be used for the district's long-range plan required by Standard H. *School Library Media Programs: A Resource and Planning Guide* describes what a long-range plan should include in general terms on page 21. The sample outline below is based on a review of plans from Wisconsin school districts. It was developed by Helen Adams, Rosholt Public Schools, Rosholt, WI, March 1988, for the department.

1.	**Title Page:**	"Long Range Plan for Library Media Program for the _____ School District." Also include date and committee members.
2.	**Table of Contents:**	
3.	**Introduction:**	Rationale for the long-range plan, and a brief history of how the plan was developed.
4.	**Philosophy Statement:**	Reasons for the library media program's existence, based on district philosophy of education.
5.	**Goals:**	General, broad aims for the library media program closely tied to the district's philosophy of education and instructional goals.
6.	**Status Report:**	Information about the current collection, services, staff, facilities, and equipment at the building and district-levels, based on an analysis of the program, checklists, surveys, inventories, and other needs assessment measures.
7.	**Objectives:** (recommendations for the next 5 Years)	Specific objectives for the building-level and district-level library media programs, related to the goals as much as possible, based on prioritized results from a needs assessment in each building in 5 areas: collection, services, staff, facilities, and equipment.
8.	**Additional Information:** (Optional)	Rationale from needs assessment, supporting statements from *School Library Media Programs: A Resource and Planning Guide*, a listing of benefits to the school district, estimated cost to the district.
9.	**Timeline:**	Schedule for completion of the objectives.
10.	**Policies:**	Explanation of existing policies and policies which need to be revised or developed to carry out the plan.
11.	**Concluding Statements:** (Optional)	Any additional statements the writers feel are important to interpreting the plan.
12.	**Appendices:** (Optional)	1. Brief history of library media programs in the district. 2. Statistical information supporting needs (graphs, etc.). 3. Compilation of the needs assessments surveys. 4. Summary of objectives/recommendations with calendar for completion.

BEST COPY AVAILABLE

AUTOMATION AT THE LOCAL LEVEL WORKSHOP

E V A L U A T I O N

Your opinion is very important to us and your cooperation in completing this form is greatly appreciated. The information you provide will help in the development of future workshops.

Please rate each aspect of the workshop listed in the left hand column below and add your comments on how any aspect can be improved.

	Poor				Excellent
1. The materials you received:	1	2	3	4	5
Comments:					
3. The overall topic:	1	2	3	4	5
Comments:					
4. The value of the ideas presented:	1	2	3	4	5
Comments:					
5. The length of the workshop:	1	2	3	4	5
Comments:					
6. The format of the workshop:	1	2	3	4	5
Comments:					
7. The knowledge of the presentor(s):	1	2	3	4	5
Comments:					

What other topics would you like to see addressed in future automation workshops?

Additional comments (use other side if needed):